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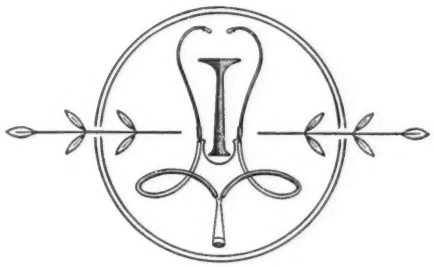

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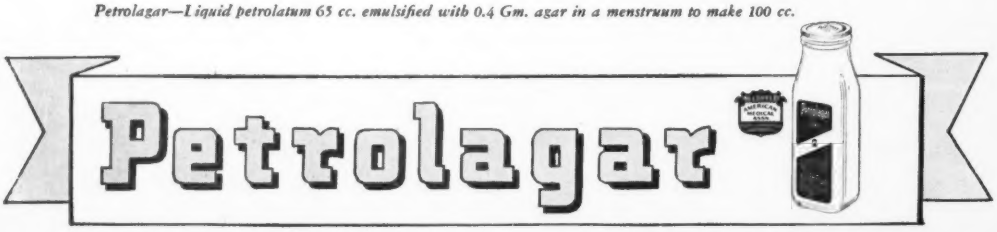

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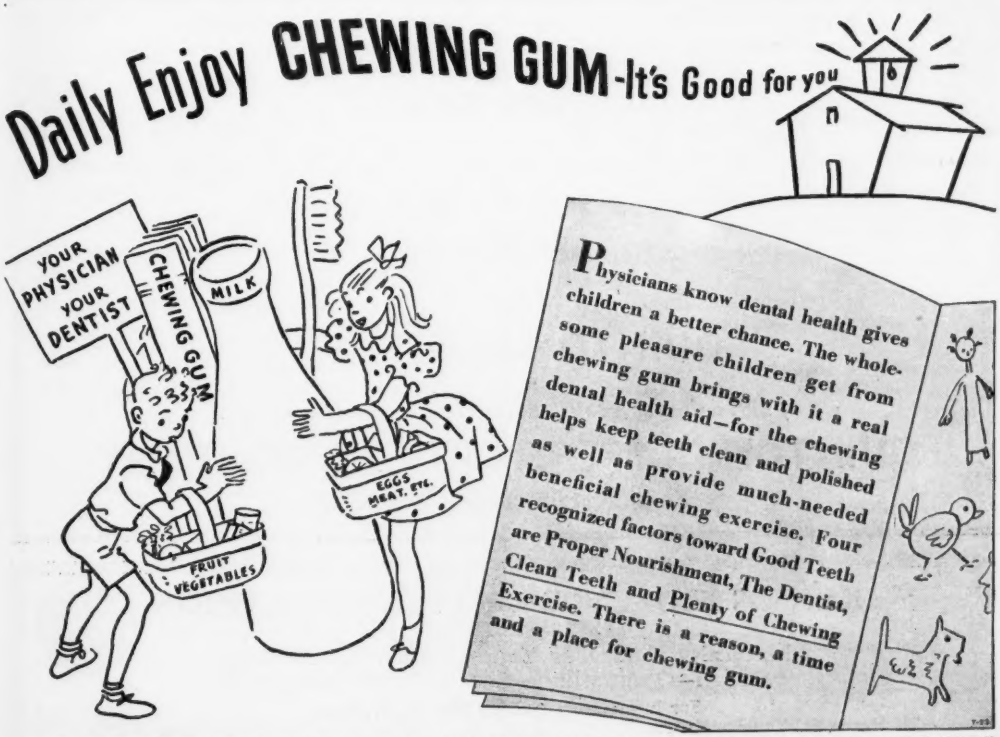

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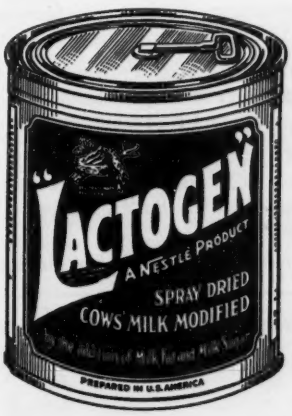

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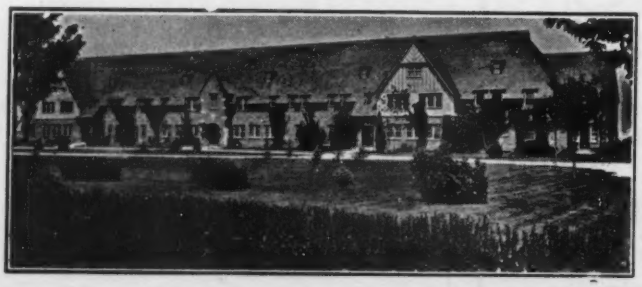

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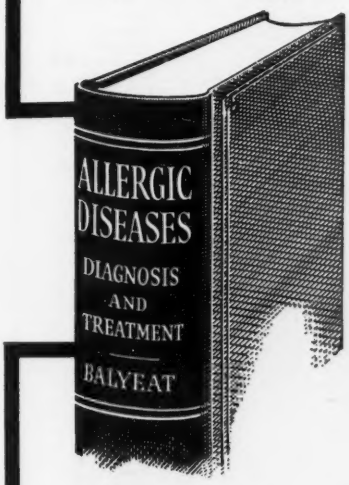

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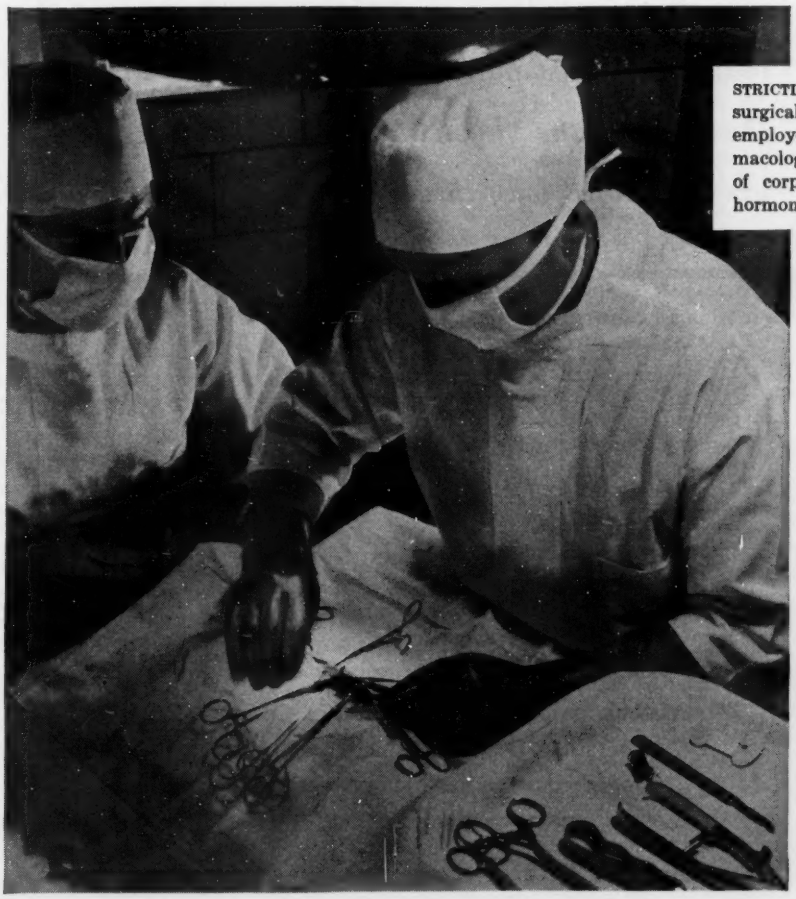

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CONGENITAL HYPERTROPHIC PYLORIC STENOSIS*

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Kansas City, Kansas

The last thirty-two infants admitted to the children's ward of the University of Kansas Hospitals with the diagnosis of congenital hypertrophic pyloric stenosis form the basis of this study. In this series we have considered race, sex, age of onset of symptoms, age at time of operation, time in the hospital before operation, changes in the blood chemistry, technic of operation, operative results, mortality, morbidity, preoperative and postoperative therapy. Since the etiology is unknown and the pathology and symptoms have been frequently discussed elsewhere they are omitted in this report.

In this group there were twenty-five males and seven females. There was one negro female. The disease is commonly regarded as rare in the negro and very rare in the negro female. There were identical twin males. Twenty-nine of the patients were submitted to operation. These facts and the age of onset of symptoms, time in the hospital before operation and the type of operation are shown in Table I. The results of blood chemistry studies in nineteen patients are recorded in Table II.

OPERATION

The Rammstedt operation was done in all cases. Local anesthesia was used in twenty-seven of the twenty-nine patients. One-half of one per cent novocaine without adrenalin or with not more than two minums of adrenalin to the ounce is advised. No sedative is given. A sweetened pacifier definitely aids in quieting the child. In rare cases ether anesthesia is advisable to prevent struggling, particularly in the older infants. Rather than strap the patient to a table or board we prefer that assistants hold the arms and legs.

*From the Departments of Pediatrics and Surgery, University of Kansas, Kansas City, Kansas.

An incision four to five cm. (one and one-half to two inches) long is made through the right rectus muscle near the midline beginning near the costal margin and extending downward. A high incision is a protection against evisceration of the small intestine and later disruption of the wound. The liver margin and partially distended stomach aid in preventing escape of small bowel through the wound. The incision is made down to the posterior fascia which is left intact until several through and through sutures of silk are placed. These sutures are held aside when the abdomen is opened, and are used as tractors to lift the abdominal wall if evisceration occurs and are helpful in final closure.

The stomach wall is grasped with gauze between the fingers and drawn into the wound where it is held by an assistant. With the left hand the operator is then able to grasp the pyloric tumor between the thumb and finger and hold it freely exposed in the wound until the operation is completed. The serosa and superficial fibers are incised across the tumor using great care not to enter the duodenum or stomach. With a small pointed hemostat the margins of the wound are spread apart, breaking the circular muscular fibers down to the mucosa. When the constricting fibers are severed the mucosa will bulge into the incision throughout its length. The danger point is at the junction of the pyloric ring with the duodenum where the latter forms a sulcus about the distal end of the ring as it protrudes slightly into the duodenum much as a cervix extends into the vagina. If the duodenum is accidentally opened it can be easily closed with fine sutures of chromic catgut or silk with very little danger of subsequent leakage.

There is very little bleeding and usually no ligatures or sutures are required. A portion of omentum is sutured over the incision, using a fine curved intestinal needle threaded with fine catgut or silk. The fascial layers of the abdominal wound are closed with fine chromic catgut or silk and the skin with the previously placed traction-silk sutures. (Fig. 1).

TABLE I

Patient	Sex	Color	Age at onset of symptoms	Age Rammstedt Operation	No. of hours between admission and operation	Result
E.J.S.	F	W	32 days	49 days 52 days	19 hours 12 days (2nd operation)	Cured
R.L.M.	M	W	22 days	30 days	19 hours	Cured
R.J.	M	W	11 days	48 days	17 hours	Cured
H.M.	M	W	14 days	34 days	92 hours	Cured
J.M.	M	W	21 days	48 days	5 hours	Died 24 hours after operation. No autopsy
B.M.	M	W	28 days	42 days	3½ hours	Cured
C.J.V.	M	W	17 days	28 days	20 hours	Cured
F.E.M.	M	W	18 days	34 days	6 hours	Cured
W.J.	M	W	27 days	48 days	4 hours	Cured
J.P.	M	W	21 days	35 days	52 hours	Cured
W.H.S.	M	W	21 days	41 days	21 hours	Cured
J.J.	M	W	10 days	No operation		Died 13 hours after admission No autopsy
R.L.	M	W	28 days	75 days	97 hours	Cured
J.D.E.	M	W	35 days	45 days	71 hours	Cured
C.R.S. (twin)	M	W	21 days	No operation		Died 3 days after admission. Autopsy
C.R.S. (twin)	M	W	21 days	No operation		Died 5 days after admission. Autopsy
E.M.	M	W	18 days	31 days	24 hours	Cured
J.F.C.	M	W	14 days	29 days	18 hours	Cured
G.A.C.	M	W	21 days	65 days	46 hours	Cured
Baby S.	M	W	28 days	55 days	25 hours	Cured
D.K.B.	M	W	35 days	67 days	43 hours	Cured
E.J.K.	M	W	21 days	37 days	5 hours	Cured
J.C.R.	M	W	28 days	43 days	24 hours	Cured
D.E.S.	M	W	10 days	38 days	6 hours	Cured
J.S.	M	W	14 days	96 days	64 hours	Cured
E.M.O.	F	W	30 days	41 days	17 hours	Cured
C.S.	F	W	21 days	69 days	40 hours	Cured
L.S.S.	F	W	21 days	45 days	4½ hours	Cured
J.M.	F	W	14 days	34 days	42 hours	Cured
R.H.M.	M	W	21 days	40 days	2½ hours	Cured
C.J.	F	C	14 days	49 days	216 hours	Cured
V.D.S.	F	W	10 days	49 days	4½ hours	Cured
Average	F 21.87% M 78.13%	W 96.88% C 3.12%	21.15 days	46.41 days	34.75 hours	

TABLE II

BLOOD CHEMISTRY

Patient	Nonprotein nitrogen Mgs. per 100 cc.	Blood Urea Nitrogen Mgs. per 100 cc.	Whole blood chlorides Mgs. per 100 cc.	Carbon dioxide combining power volume per cent
E.J.S.			390	51.8
R.L.M.	54.5	9.1	500	52.2
R.J.		56.04	290 320	73
H.M.		28.7	450	73
J.M.			330	61.5
C.J.V.	125		350	90
W.J.		33	370	92
J.P.	36.6		400	62.6
J.J.		34.09	420	69
J.D.E.		11.2		
C.R.S. (twin)	39.2		390	71
C.R.S. (twin)	10/13 38.2 10/16 51.8		385 520	83.8 63.7
E.M.	33.3		300	57.9
J.F.C.			400	
G.A.C.	34.1		450	27.7
E.J.K.	75.8		400	
J.S.	11/10 30.9 11/20 29.2		360 530	89.1 57.9
R.H.M.	75.		350	86.2
V.D.S.	32.6		410	80.1

PREOPERATIVE AND POSTOPERATIVE THERAPY

This subject deserves special emphasis. Many patients with complete pyloric obstruction have been extremely dehydrated and weighed less or little more than the birth weight. Several of the patients here reported have shown an increase in the blood non-protein nitrogen, an increase in the carbon dioxide combining power and a decrease in the chlorides. In a few instances there was a definite alkalosis with symptoms of gastric tetany.

Physiologic sodium chloride or Ringer's solution is given at once under the skin in the outer surfaces of the thighs. The average quantity given at one time is 150 cc. Transfusions of 100 cc of citrated blood have been given in some of the cases.

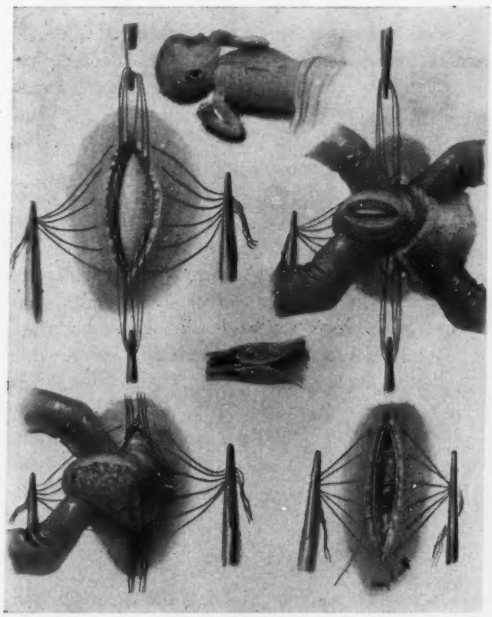

Fig. I

If the diagnosis is clear operation is advised as soon as preliminary hypodermoclysis of sodium chloride solution is completed. If the diagnosis is doubtful or the pyloric obstruction partial, gastric lavage and feedings are tried. The x-ray was used in the diagnosis of twenty-one of our patients. An x-ray study is advised if the diagnosis it at all doubtful. It is suitable for all cases provided its use does not delay operation. Retained barium should be promptly removed from the stomach by lavage with physiological salt solution.

Following the operation sodium chloride or Ringer's solution is repeated until liquid food is taken in sufficient quantity to supply the need. Small quantities of water or diluted milk may be started within an hour or two after the patient returns from the operating room. If the baby is nursing it may be permitted to nurse for short intervals. Feedings should be increased to normal as rapidly as tolerated. Transfusions may be repeated if there is anemia. In extreme cases oxygen may be given for a day or two. These patients usually make rapid postoperative recoveries with response to food which is sometimes dramatic.

MORBIDITY AND MORTALITY

A definite pyloric tumor was found in all infants operated upon. Post operative complications have been very few. The patients may vomit a few times but this usually ceases entirely in the first forty-eight hours. If vomiting is persistent the stomach should be lavaged between feedings. Wounds have healed well. There has been no disruption of a wound. We have had no reports of a postoperative hernia. An incomplete operation was done in one case necessitating reoperation to relieve the obstruction.

There were four deaths in this group of thirty-two patients. Twenty-nine patients were operated upon with one death. The cause of the postoperative death was thought to be peritonitis although an autopsy was not permitted to determine the source of the infection. Inspection through the wound did not reveal a leak at the site of operation.

One baby weighing six pounds and four ounces died thirteen hours after admission while being prepared for operation. Thirty minutes following a transfusion of 150 cc. of citrated blood the child became cyanotic, vomited blood and died. The transfusion may have been a factor in the cause of death. An autopsy was not permitted. Identical male twins entered the hospital at the age of nine weeks having been vomiting since they were three weeks old. Each weighed five pounds and one and one-half ounces, The birth weight was reported as seven pounds. The progress of these two patients was almost identical. Even the changes in the blood chemistry were nearly the same. Because of the extreme emaciation and dehydration of these twins an effort was made to improve their condition by transfusions and infusions. One died three days after admission and the other at the end of five days. Autopsies were granted and showed a typical congenital pyloric stenosis in each. In one the pathologist remarked that the cause of death was not clear. The positive findings were hypertrophy of the pyloric sphincter with hypetrophy of the distal stomach wall, slight congestion of the lungs and kidneys, and an unusually small thymus. The other patient showed similar findings and in

addition definite bronchopneumonia and acuteglomerulonephritis. It is probable that the principal causes of death in these patients were starvation and chemical changes incident to pyloric obstruction and vomiting.

In reviewing these three patients treated medically we are now of the opinion that they should have been operated upon a few hours after admission in spite of the poor risk. When pyloric obstruction is complete, death is inevitable without operation. There is no medical treatment for such patients beyond supportive measures to make them better operative risks.

SUMMARY AND CONCLUSIONS

1. Thirty-two babies with congenital pyloric stenosis are reported. Twenty-nine of these were operated upon with one death, a mortality rate of 3.4 per cent.

2. The Rammstedt operation was used in each case. Local anesthesia has been the choice. No evidence of novocaine poisoning has been detected. Wound healing has been satisfactory.

3. The importance of early operation is emphasized when a positive diagnosis of pyloric stenosis is made. Preoperative supportive treatment is imperative in extreme cases and desirable in all cases. Prolonged medical treatment reduces the chance of recovery following operation.

4. When in doubt the diagnosis should be confirmed by immediate x-ray studies.

5. The importance of early postoperative feeding is stressed.

SPINAL CORD COMPRESSION INJURIES

Broken Necks and Broken Backs with Spinal Cord and Spinal Nerve Injury*

Ralph M. Stuck, M.D.

Denver, Colorado

The spinal cord and spinal nerves, in traumatic conditions of the neck and back, are frequently damaged, many times severely, by the over-enthusiastic well-meaning public, at the scene of the accident. The handling of the patient both at the scene of the accident and in the hospital is a problem of utmost importance.

The spinal cord and spinal nerves may be damaged by pressure of the laminal arch of the upper vertebra against the lower vertebral body, or by fractures dislocations or both when the back is seriously injured or hyperflexed as in diving in shallow water, etc. In such accidents the spinal cord and spinal nerves may be compressed or contused, or in more serious cases, completely severed. The pathological changes within the cord vary from edema and petechial hemorrhage, in the milder cases, to gross hemorrhage and laceration of the cord in the more severe. In addition, there may be an associated hemorrhage from the pia mater and dura mater (subarachnoid and subdural) which produces a block in the spinal fluid circulation. Occasionally the ligaments are torn along with the dura and may press upon the cord.[1]

FIRST AID

The emergency care of these patients is of the greatest importance. This should be directed first, to treating the patient himself for pain and shock, and second to preserving the spinal nerve structure when moving the patient. The following rules for emergency treatment are essential:

In cervical injuries the patient should not be moved, unless it is absolutely imperative because of shock, until there is enough help available to hyperextend the head and neck and move him gently and deliberately. In the presence of shock and unconsciousness the head and neck should still be gently hyperextended and held in a fixed position while he is being moved (Fig. I-IV). The patient can be laid on a stretcher or in bed with pillows under the shoulders and sand bags at the sides of the head, in order to keep his head fixed in a position of hyperextension (Fig. IV).

In thoracic and lumbar lesions the patient should be handled with the same degree of care. However, it is easy to hyperextend the lower spine by laying the patient on his face in a blanket or by carrying him face downward, supporting his shoulders and feet[2] (Fig. VI-VII).

Twisting the patient is dangerous and should be avoided when turning him in bed.

Morphine may be used for the relief of pain although it masks neurological symptoms and its use is debatable.

If shock is present it is treated by the usual supportive measures—warmth, fluids and blood transfusion.

DETERMINATION OF INJURY

It is important from the medico-legal standpoint and from the standpoint of the progress of the patient, to determine the amount of nerve injury sustained when the patient is first seen, whether it

*Read before the Ford County Medical Society November 10, 1938 at Dodge City and the Finney County Medical Society November 14, 1938 at Garden City.

FIG. 1

FIG. 2

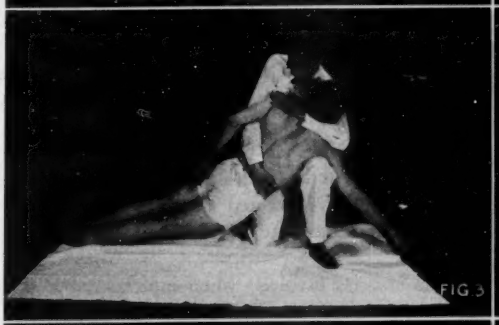
FIG. 3

FIG. 4

FIG. 5

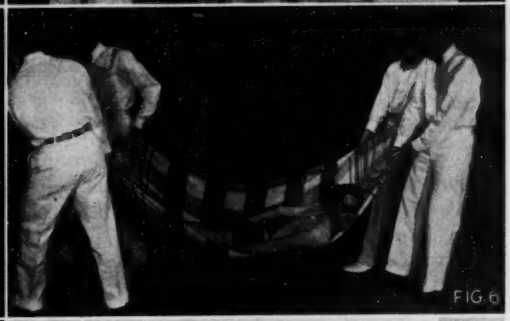
FIG. 6

FIG. 7

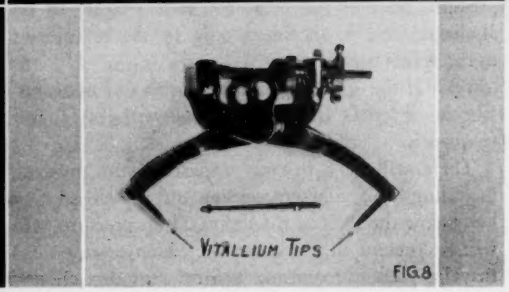

FIG. 8

be at the scene of the accident or in the hospital.

A brief but adequate examination can be performed if the following observations are made:

1. Ask the patient to move his hands and feet gently.

2. Observe the skin area involved in sweating and gooseflesh as this will usually correspond to the sensory level of the lesion.

3. Observe and record the sensory level, reflexes, motor power and level of pain.

4. Pinch the great toe. If there is no sensation, the spinal cord is probably completely severed.

5. Note any angulation of the spine.

6. Examine the back of the throat for any evidence of forward dislocation of the first four cervical vertebrae.

7. Do not press upon the spinous processes since there is danger of producing further nerve damage.

8. X-ray the patient in the position of hyperextension and never hesitate to x-ray the entire spine if the first examination is not satisfactory.

Having completed the initial examination and first aid care, the examiner should direct his efforts toward finding whether the spinal cord is completely or partially severed. This may seem of academic interest only, but it is valuable in following the progress of the patient and in answering the question, "Will he ever walk again?"[3]

(A) If the spinal cord is completely severed these symptoms will be found:

In the stage of spinal shock, the muscles will be toneless and flabby, the superficial and deep reflexes will be lost and there will be a retention of urine and feces. In the stage of reflex activity, there will be a "Mass" reflex response in the extremities below the level of the lesion with any painful stimulus in this area. This response is characterized by a flexor spasm of the muscles of the abdominal wall and extremities, evacuation of the filled bladder, sweating in the paralyzed sensory area, and occasionally priapism and ejaculation. In the terminal stage there is gradual failure of all reflex responses, and this may also develop if severe infection or debility occurs.

Deep pressure pain in the great toe may be lost and is evidence of complete irrecoverable sensory and motor loss.[4] The nerve tracts carrying deep pain sense (position, vibration, bone, tendon, and deep pain) from the great toe to the brain, in man, are situated centrally in the spinal cord and are thus protected from injury. For this reason deep pressure pain in the great toe is less likely to be abolished and is abolished only in severe injuries to the spinal cord.

(B) If the spinal cord is contused and not completely severed, these symptoms will be found frequently:

There will be a partial paralysis of the muscles, including the sphincters, and an incomplete sensory loss below the level of the lesion. Deep pressure pain will be present in the great toe. Extensor responses may be present from any painful stimulus elicited below the level of the lesion and the patient may lie in bed in hyperextension. If extensor responses are present his movements in response to pain will be incoordinate and spastic. There may be an early appearance of the Babinski sign, a failure to evoke the "Mass" reflex and a history of absence of spinal shock. The paralyzed extremities will possess moderate tone and some degree of muscle function with subtotal anaesthesia.

LEVEL OF CORD INJURY

It may be possible to locate the level of the nerve lesion from a brief neurological examination without the help of the x-ray if the following points are borne in mind:

When there is damage at the level of the first or second cervical segment there is usually respiratory difficulty of the medullary type characterized by early loss of consciousness, stertorous, irregular and shallow breathing, rapidly leading to death.

Injury at the level of the third or fourth cervical segment also leads to respiratory difficulty but of the phrenic-intercostal type. This type of respiratory difficulty is recognized by a late loss of consciousness and an asphyxia as the result of inability to expand the chest. These patients may live several days or weeks.

With injuries at the fourth cervical segment the patient will lie with his arms abducted, forearms flexed and rotated outward because of a paralysis of the deltoids, biceps, brachialis and supinators.

The muscles involved when injuries are at other spinal levels are these:

C_5 deltoid
C_6 biceps
C_7 triceps
T_1—T_8 the corresponding intercostal muscles
T_9 and T_{10} upper abdominals
T_{11} and T_{12} lower abdominals
$L_{2\text{-}4}$ adductors of the thigh
L_4 dorsiflexors of the foot

One cannot be expected to remember all of these details at each examination but a few points in general can be remembered.

For instance, in cervical lesions extremely high fever is frequently seen as a result of a paralysis of sympathetic nerves with a loss of sweating and heat conduction. Priapism is often observed. Horner's syndrome (a unilateral contraction of the pupil—drooping of the lid—enophthalmos—and a loss of sweating over the face) may be seen in lower cervical lesions. Sensory and motor paralysis are usually found below the level of the lesion.

Impairment of chest expansion with an associated level of sensory loss indicates a thoracic lesion.

Below the thoracic region, motor and reflex responses are usually sufficient to localize the lesion.

Pain, evidence of contusion to the back, spinal deformity, the position in which the patient is found, and, of course, the x-ray are all of definite localizing importance.

TREATMENT

The operative care of these patients may be divided into three periods: (1) the period of immediate or emergency care, (2) the period requiring a brief observation, and (3) the period, days or weeks after an injury.

Shock is usually not present when these patients are first seen but, if it is present, it should be treated

in the usual way by application of warmth (not heat), injection of fluids and blood transfusion.

As a preliminary to any operative procedure, in the routine neurological examination a spinal puncture should be performed. Subarachnoid hemorrhage will be manifested by blood in the spinal fluid and if meningitis is present there will be an increased number of white blood cells. Xanthraochromic (yellow) spinal fluid or clear fluid with increased protein, which clots on standing, (Froines Syndrome) is indicative, in the late cases, of a partial or a complete spinal block. The Queckenstedt test is of great assistance and should be performed with the utmost care. In cervical lesions it is not advisable to compress the jugular veins manually because of the danger of producing further nerve damage. The Grant blood pressure cuff method is preferable as it is safer. In this procedure a blood pressure cuff is substituted for manual jugular compression,[5,6].

IMMEDIATE OPERATIVE CARE

Orthopedic care is indicated first in these patients. By this I mean they should all be placed in a position of hyperextension with traction. For lesions in the cervical region this is best accomplished by applying the Crutchfield skeletal traction tongs[7] (Fig. VIII). In the thoracic and lumbar regions reduction is most satisfactorily accomplished in the hyperextension frame or body cast.

Manipulation of the spine under an anaesthetic, which has been advised for fractured vertebrae, is contraindicated because of the danger of further cord damage.

The indications for immediate laminectomy are, therefore, demonstration of spinal cord or spinal nerve compression, or progression of already existing neurological symptoms.

OPERATION AFTER A SHORT PERIOD OF OBSERVATION (twenty-four to forty-eight hours)

Laminectomy may be delayed twenty-four to forty-eight hours and in the cases without definite complete spinal block as demonstrated by the Queckenstedt test, careful repeated neurological examinations may reveal that the patient is improving. If so, operation is not necessary for in many cases hyperextension and traction are all that are needed.

Laminectomy is indicated where there is a complete spinal block, where there is rapid progression of symptoms and where bony fragments may be seen by x-ray to be impinging upon the cord.

In any questionable case laminectomy should, of course, be done either early or late if there is any suspicion of spinal cord or spinal nerve compression.

LATE OPERATION

Operation is still indicated a week or more after the injury if it can be demonstrated that spinal cord or spinal nerve compression exists. In the late cases evidences of compression are: (a) x-ray changes in the position and condition of the vertebrae, (b) spinal block as demonstrated by the Queckenstedt test and lipiodol injection, (c) increased protein in the spinal fluid and (d) the aforementioned neurological findings.

OPERATIVE PROCEDURE

Laminectomy should be carried out with the patient in a position of hyperextension and with traction to the head whenever this is possible. In this position no further contusion of the cord and nerves is likely. Compressing bony fragments and torn ligaments should be removed, subdural clots evacuated, intramedullary hemorrhage aspirated (not opened and drained because the edema of the cord may completely herniate that portion of the spinal cord), severed nerves, particularly in the cauda equina, should be sutured, and a single sensory root should be cut where the corresponding ganglion has been crushed (to prevent posttraumatic root pain).

POSTOPERATIVE CARE

The most important part of the postoperative care of these patients is adequate nursing. This entails constant observations for sudden rises in temperature (in cervical lesions) for distended bladder, bladder infection, and for skin ulceration (in any of these lesions.) The patient should be turned frequently and with the utmost care.

The treatment of the bladder is second in importance only to good general nursing. It has been customary to catheterize the patient, where there was a retention, every eight hours for about the first week and then to insert a retention catheter with an automatic irrigating device that could be irrigated approximately every four hours. The catheter was changed at least once a week. The new tidal drainage of Munro should be used where this apparatus can be made. By this method the tone of the bladder remains unaltered and bladder infections are minimal.[10] Suprapubic drainage I believe is indicated now only in severe bladder infections.

To prevent the formation of decubitus ulcers frequent turning, frequent changing of soiled lined, and the use of special soft mattresses such as the Beauty Rest are essential. The skin must be kept clean, dry and preferably oiled, and the sheets should be clean smooth and unstarched. All attendants should be

warned of the danger of burning the patient with hot water bottles.

Should a decubitus ulcer develop, it is best treated by using Dakin's dressings locally and by the administration of sulphanilamide. Careful application of the heat lamp is also beneficial.

Physiotherapy (heat, massage and passive exercise of the extremities) should be pursued actively in dealing with flaccid muscles, and cautiously with the spastic ones.

Occupational therapy should be directed toward putting the patient in a condition to serve himself and his family. Surprisingly enough there are many jobs which these patients can perform.

SUMMARY AND CONCLUSIONS

1. Proper first aid care of spinal injury cases will often mean that the patient may walk, while poor handling may lead to nerve injury with paralysis and, in many cases, death.

2. A brief neurological examination at the scene of the accident is valuable both from a medico-legal and a prognostic standpoint.

3. All neurosurgical procedures in these cases are indicated only after careful repeated neurological examinations.

4. Laminectomy with freeing of spinal cord and spinal nerve pressure is indicated where any of the following are present:

a. Progressive paralysis.

b. X-ray evidence of spinal cord or spinal nerve compression.

c. Spinal block as demonstrated by the Queckenstedt test, increased spinal fluid protein, and lipiodol injections.

5. With adequate nursing, bladder infections and decubitus ulcers do not develop.

6. Occupational therapy will rehabilitate many of the paralyzed patients.

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ANEMIAS

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It is generally accepted that there are three sources of blood cells in the human body. From the bone marrow, from the lymphoid or adenoid tissue and from the reticulo-endothelial tissue.

From the bone marrow comes:

A. Adult red cells. The mother cell being the (erythroblast) which is seen only in bone marrow, which in turn gives rise to the normablast or nucleated red cells which in turn loses its nucleus and becomes the normal red cell.

B. Leukocytes have their origin in the bone marrow and the mother cell is called the myeloblast which becomes the myelocyte and then the normal leukocyte.

C. Blood platelets are formed in the bone marrow, the mother cell being the (megakaryocyte).

From the lymphoid tissue comes the:

A. Lymphocytes or mononuclear cells whose mother cell is the (lymphoblast).

From the reticulo-endothelium comes:

A. The large mononuclear

B. The transitional

C. Megaloblasts (pathological cells which are a response to severe anemias). The function of the cells are farely well known to all. The red cells to carry oxygen from the lungs to the body tissue.

The leukocytes are purely protectors by means of their various enzymes they digest or egest bacteria and protein material. The eosinophiles having the best protellytic powers, and they increase in number when the body is invaded by a foreign protein or parasites. The platelets command the clotting and retraction of the blood. The mononuclear cells transport food from the lacteals of the intestines to other parts and also function as phagocytics. The large mononuclear and transitionals have powers unknown. They do have granules which probably have a protective power by enzyme formation.

The megaloblast is an emergency hemoglobin carrying cell. In the embryo red cells are derived from this cell but as soon as the bone marrow starts to work this cell appears in the blood stream only in severe anemias.

Most men classify anemias according to the physiological function or dysfunction as the case may be into three types of anemia.

A. Due to slow production(primary).

B. Due to rapid loss(hemorrhage) or secondary.

C. Due to rapid destruction (hemolytic).

While anemias concern only the red blood cells and hemoglobin one has to know about the white blood cells, and the blood platelets all of which seem to suffer.

Tests universally used in anemia classification are:

A. Red cells per. cc undiluted blood test (known by all).

B. White cell count procedure also known by all.

C. Hemoglobin (easily determined).

D. Color index is meant the per cent hemoglobin in each cell and is determined by dividing the per cent of hemoglobin by the per cent of red blood cells or a simpler method is to merely multiply the per cent hemoglobin by 50,000 and divide by the number of red cells found in the count. For example; if the reds were 990,000 and the Hg. twenty per cent, 20 x 50,000 equals 1,000,000. 1,000,000 divided by 990,000 makes the color index 1 plus.

E. Volume index is the relation to normal and is a measure of the relative size of the red cell. To determine this ten cc of patients blood is certifuged with two cc of 1.6 per cent sodium oxylate and the volume compared with ten cc of normal blood treated the same way. A higher volume index shows the cells are larger and thus contain more hemoglobin.

F. Fragility of erythrocytes is to determine the stage at which hemolysis of the cell starts and when complete, and is determined by tests with different percentages of saline solutions. Normally hemolysis begins around 0.42 per cent saline and ends or is complete 0.36 to 0.32 per cent. Thought to mean a weak state when fragility is greater than normal.

G. Van den Berg Test is used to determine the amount of bilirubin in the blood. This is really a liver function test. The fact that bilirubin when mixed with an alcoholic solution gives a reddish color reaction in the presence of diazo reagent in some cases immediately and others delayed, and in some cases the color becomes more intense with time. Van den Berg reasoned that bilirubin must be of two different types. That in certain jaundice cases a positive color appears immediately without the alcoholic solution and gives a prompt or direct reaction signifying an obstruction in the bile ducts and hepatic ducts. Delayed reaction signifies an excessive blood distruction and deranged liver cell function. The slow color test with deepening in color or biphasic signifies both obstruction and derangement as found in infective cirrhosis and malignancy. This test is used in a differential diagnosis of jaundice.

The differential diagnosis of anemia is not difficult in the last stages of the disease usually but often times it is difficult in the beginning.

I wish at this time to report the following case which is one of those difficult cases.

A white man, age forty-eight· came to my office August 27, 1938 complaining of weakness, shortness of breath and jaundice of a weeks duration. He had been well all of his life except for pneumonia at three years of age and small pox at twelve. His family history was negative except his first wife died two years ago from tuberculosis of the lungs. He was married the second time. At the time of his first visit he presented the following picture. Temperature 102. Respiration 24. Pulse 88. He had a systolic heart mummur heard over his left chest. Blood pressure 150/62. His liver was greatly enlarged and spleen felt to be three times its normal size. His ankles pitted on pressure and the following is his first blood picture:

Red cells 990,000, white cells 11,900, hemoglobin 20 per cent. eosiniphiles 2 per cent, stabkernige 6 per cent, segmentkernige 71 per cent, lymphocytes 13 per cent, monocytes 8 per cent, total polys. 77 per cent, Fragility .40/.28. control being .43/.34. The sedimentation test showed twenty mm in forty-five minutes. His blood was type (2) Moss. His stomach content showed an absence of free hydrochloric acid. The Van den Berg was delayed. The color index was 1. plus and his icterus index was 23. He had a negative Wassermann and showed a trace of albumin in his urine. He was immediately put on a pernicious anemia diet with liver in all forms both by mouth and by hypo. He was given dilute hydrochloricacid with his food but showed no rise in either the hemoglobin or number of red cells. He was then given three blood transfusions after which he showed the following blood picture. Red cells 1,200,000, white cells 6,500, Hg 23 per cent, color index 1.1. The white cells showed eosiniphiles none, stabkernige 6, segmentkernige 50, lymphocytes 30, monocytes 8, total polys. 55 per cent. The red cells showed numerous erythroblasts. Anisocytosis, poikilocytosis and several stippled reds, which was the same picture of the red cells at the beginning of treatment.

In spite of liver medication and the blood transfusion the liver enlarged the spleen became more palpable and the patient developed a marked ascites and swelling of both lower limbs. For twenty-four hours following each blood transfusion the patient claimed he was much better. However the later transfusions were usually followed by a severe chill and at one time he developed 26,000 white cells. In twenty-four hours more his skin would show a lemon-yellow color and he would become short of breath again. Fifteen blood transfusions were given

with an average of 400 cc at each time. Death occurred just three months from the date of onset, the diagnosis being pernicious anemia, acute nephritis.

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REGIONAL ILEITIS

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Regional ileitis was first described as a clinical and pathological entity by B. B. Crohn, in 1932, as a benign inflammatory lesion, involving most commonly the lower ileum, ascending and first portion of the transverse colon. Since that time it has been well shown that the condition, although having predilection for these areas, is not necessarily limited to these, but may involve the entire ileum or the entire colon. Prior to this time, many conditions had been described in the literature, of a granulomatous nature possessing similar symptomatic and pathological features which were often confused for malignant conditions. Shortly following this, Harris used the term, cicatrizing enteritis, which only signified a further end stage of the same process. Since the definite establishment of the clinical entity of regional ileitis, Jackson, in 1937, reviews the literature reporting a total of 219 cases to date, thus showing the rarity or missed diagnosis of this condition.

ETIOLOGY

The etiology is still unknown. Whether the condition is due to repeated intestinal infections of the acute enteritis group or due to bacterial invasion of the intestinal wall from repeated low grade appendiceal or retro-cecal or mesenteric lymphatic infections, is a very interesting conjecture. However, the heavy bacterial flora of the ilio-cecal region in itself should never result in infection of the bowel wall unless there has been some exciting factor giving entry of the bacteria into the submucosa. Infection of the bowel can cause diarrhea and as this is one of the symptoms of an early regional enteritis, the inflammatory condition possibly may be bacterial in origin. Mesenteric lymphadenitis is most common in the glands of the lower ileum, but their etiology is unknown (Christopher Surgical Pathology P. 1180). That mesenteric lymphadenitis is always bacterial is not positive as many glands are found on culture to be sterile. It is possible that a common cause is the absorption of incompletely or improperly digested protein material from the bowel. Mesenteric lympadenitis is undoubtedly related to regional enteritis, both possibly being due to low grade infections of the lymphatic system. Both are common in young adults and either may undergo complete spontaneous cure or may go on into a chronic form. Probstein and Gruenfield believe that the stagnation of fecal current at the iliocecal valve predisposes to greater absorption of bacterial material by the great abundance of lymphoid tissue present in this area.

The only other specific infections of note of the small bowel are tuberculosis and typhoid fever, each of which is a definite etiological entity. Syphilis is very rare and actinomycosis is practically unknown in this region. Asiatic cholera, bacillary dysentery and amebic dysentery are likewise separate eneities.

Reichert and Mathes believe the two dominant features in etiology are a low grade infection with a concomitant chronic lymphedema.

PATHOLOGY

The lesions of the various intestinal segments are pathologically identical, representing a progressive disease passing through various phases, from an acute process to hyperplastic changes and finally scar tissue production with destruction of the normal histology of the intestine. Associated with this may occur various sequelae, such as mesenteric abscess, intestinal perforation and fecal fistula. The symptoms of the lesion will also be progressive and changing according to the pathological phase present at the time. Patients observed over a period of years will, as a rule pass through all phases from acute to chronic, with destruction of all normal function of the intestine involved. The diseased bowel presents no definite diagnostic characteristics, it is non-specific, showing only various phases of inflammatory reaction. There may be an acute inflammation with edema and hyperemia with enlarged, soggy, hose-like intestine of a maroon color. Hyperplasia of the regional mesenteric gland is usually present. The mesentery may or may not be involved, and this determines what type of treatment is necessary. The intestinal involvement is either segmental or patchy, the tendency being toward more patchy involvement in the colon and segmental in the ileum; the descending colon only being involved in more rare instances and as the disease progresses. The microscopic study presents the usual acute, subacute or chronic inflammatory tissue, with occasional giant and epithelioid cells in the later stages. No specific changes are present and one phase may be merged with the next.

SYMPTOMATOLOGY

Due to the lack of definite specific symptoms, many innocent appendices have been and are still being removed for this condition, while the real source of the trouble is overlooked. The characteristic appearance and symptoms have been classically described by Crohn, Gingbury, and Oppenheimer and have not been greatly added to except by Colp in 1934 and since Brown, Bargen and Weber have reported several cases involving the ileum, cecum and part of the ascending colon. More recently an article by Crohn and Rosenah states their first reports of the disease affecting only the ileum were incorrect, as they have since experienced it in all parts of the colon as well as the ileum.

Crohn has grouped the cases into four clinical types representing progressive stages which may be true types or mixed, but do help to explain the symptomatology experience in relation to the pathology present.

GROUP I

The symptoms of this group resemble those of acute appendicitis: pain in the right lower quadrant, cramps, fever and leukocytosis. At operation the mesenteric glands of the ilio-cecal region are acutely inflammed and hyperplastic, and the terminal ileum is edematous with an acute inflammatory reaction throughout its walls. The appendix may be involved by continuity, although showing no mucosal inflammation.

GROUP II

The symptoms of this group are diarrhea, cramps, with blood and mucus in the stool. The patient may become anemic, listless and even run a low grade fever.

GROUP III

This is the stage of stenosis which follows the second stage or ulcerative stage. The lumen of the bowel becomes narrowed due to the thickening of the walls of the intestine and the stenotic effect of cicatrizing ulcerations of the mucosa. The symptoms are those of a partial intestinal obstruction with cramp like pains, vomiting, constipation and with a probable palpable mass and visible peristalsis; the degree of symptoms depending upon whether the obstruction is high or low in the intestinal tract.

GROUP IV

The fistula stage. In this group are those cases in which rupture of the intestine has occurred and fistula have formed either internally or externally through the abdominal wall.

DIAGNOSIS

The diagnosis of regional ileitis is not easy as may be judged from its non-specific symptomatology and pathology. It is usually made at operation after a diagnosis has been made of ulcerative colitis, or appendicitis, or malignancy with a partial intestinal obstruction. The only definite pre-operative diagnostic factors are the x-ray findings, which, however, are not present in the early stages. In the stenotic stage a filling defect develops in the terminal ileum or whatever segment of bowel is involved with a mild stasis and distention proximal to the filling defect. Later, as the stenosis develops more, there appears what is known as the characteristic "string sign" of Kantor, which is simply a thin string of barium passing from a dilated proximal loop of intestine through the stenotic portion into the normal portion of distal bowel segments.

DIFFERENTIAL DIAGNOSIS

Acute appendicitis is often difficult in the early stages to differentiate from the early stage of a regional ileitis. However, the more acute symptoms, with muscle rigidity, definite localization of pain, vomiting, increase in the white blood count and an increase in embryogenic white cells suggest more an acute suppurative process of the appendix.

Mesenteric lymphadenitis occurs more often in the younger individual and presents a picture with tenderness in the right ileac fossa with absence of muscle spasm and other signs of peritoneal irritation.

Ileocecal tuberculosis is rarely diagnosed before surgery, unless pulmonary tuberculosis is present or some other evidence of tuberculous enteritis or peritonitis.

Intestinal obstruction due to any intrinsic or extrinsic mechanical cause must be eliminated.

Benign neoplasm of the small intestine and colon are exceedingly rare but may grow in such a manner that they may give obstructive signs and bleeding. The malignant tumors are adenocarcinomas, carcinoid or argentaffine tumors which most commonly occur in the appendix.

TREATMENT

The method of treatment as may readily be seen, will vary and depend upon what stage of the inflammatory process is present. Karl Meyer believes that the state of the mesentery may be an indication as to treatment; that is, whether to resect, short circuit or leave alone.

Treatment must be governed by the progress of the disease and condition of the patient. Many acute cases must occur in which spontaneous recovery results. It is a question even in cases on which resec-

tion are done, whether or not the process will recur involving adjacent areas of the ileum or colon, until the question may arise whether it is advisable to resect extensive sections of bowel as a primary procedure. Again this must be governed by the condition of the patient and what he is able to stand. Mixter prefers a one stage operation with resection of the diseased portion, but feels that multiple stage operations are indicated where abscesses or fistula exist. Meyer believes that a short circuiting operation may suffice if the mesentery is only slightly involved and that spontaneous recovery of the inflammed bowel will occur if the mesentery is not involved. Treatment then must be divided, not only as to the condition of the patient, but also by the extent of the lesion and if it does not recover spontaneously then surgical intervention is indicated as early as possible before fistula and abscess formation is present and before stenosis has produced complicating sequelae.

CASE REPORT

R. K., age thirty-seven had cramping pains in right lower quadrant for three weeks. For the past six months has complained of bloating and some loss of weight and strength; in fact believes he has had an uncomfortable feeling in right lower part of his abdomen for the past year. Has been somewhat constipated for the past year, with passage of small caliber stools. Three weeks ago he had sudden, severe pains with a full bursting feeling in the right lower abdomen. The following three days the abdomen was sore and has since remained tender. No blood had been passed from bowel. He has lost fifteen pounds past few weeks.

Physical examination was essentially negative, except for the following abdominal findings: abdomen flat, a soft, definite, palpable, oblong, non-tender, firm, slightly movable mass in region between the lower pole of right kidney and cecum. Mass appears on palpation to be posterior and lateral to the normal cecal area. Mass is about eight by three cm. and can be brought definitely between the examining hands.

Laboratory findings: Urinalysis sp. gravity 1.025, neut. sugar negative, albumin, neg. acetone, neg. bile. occ. epith. cells, pus cells 2 to 3 per H. P., R. B. C. 4 to 8. Blood Count—HB. 80 per cent, R. B. C. 4,120,000 W. B. C. 8,600. Small lymphocytes 18 per cent. Large lympocytes 3 per cent. Large mononuclears 7 per cent. Polymorphoneutrophiles 72 per cent.

Cystoscopy of kidneys was essentially negative. Barium meal was essentially negative. Barium enema passed in normal pattern up to two inches below hepatic flexure, at which point it could be made to pass into the ascending colon only with difficulty and in an irregular formation; a defect was visible on the medial and posterior wall of cecum and ascending colon. The defect was smooth, with only an apparent thickening of the ascending colon and resulting narrowing of the lumen.

DIAGNOSIS

Probably adenocarcinoma of cecum. At operation a long curving incision, starting over the mass and extending into right hypochondriac area toward the right kidney was used in order to approach the mass laterally. The mass was dissected free and excised widely between clamps with cautery. Anastomosis was made of the side of ileum to the stump of the ascending colon at hepatic flexure. A small catheter was placed in the ileum four inches above anastomosis. No regional lymph glands were palpable and no involvement in right lobe of liver noted. The patient made an uneventful recovery.

The pathological examination of the specimen showed a hard, slightly friable, hose-like mass of a deep reddish-purple color, involving about four inches of ascending colon and cecum. Section through the mass shows hard, white, cellular tissues spreading out into the submucosa, muscularies and serosa of the colon. The involvement extended around the entire circumference of the colon except for an inch of the medial circumference area.

Microscopic examination revealed only chronic inflammatory tissue involving and replacing the walk of the ascending colon.

This case is presented as a regional enteritis, Group III, by Crohn. Clinical progress since operation has been uneventful and the man is now well and perfectly healthy one year following.

SUMMARY

1. Regional ileitis is a clinical and pathological entity which is rarely diagnosed preoperatively.

2. Regional ileitis most commonly involves the lower portion of the ileum, ascending and first portion of transverse colon.

3. The etiology is unknown; but is in all probability due to a slow, low grade infection of the lymphatic system, similar to mesenteric lymphadenitis.

4. The pathology depends upon the stage of the inflammatory process from acute to chronic, of the involved bowel, its mesentery and mesenteric lymph glands.

5. The symptomatology of the early stages of the disease closely resemble acute appendicitis and many innocent appendices have been removed for this cause.

6. The symptoms are progressive from the acute

inflammatory stage to the chronic stage with cicatrization and stenosis of the bowel with its concommitant symptoms of bowel obstruction, multiple abscesses and fistula formation.

7. The only definte physical finding preoperatively is the x-ray finding of a filling defect in the terminal ileum or involved colon with distention above and the characteristic "string sign."

8. Treatment consist of conservation during the extreme early stages of the process, as a few cases may undergo spontaneous recovery.

9. Those cases which present all the signs and x-ray findings of a cicatrizing process should be operated with wide resection of the diseased bowel if the condition of the patient permits.

10. The mortality rate is high in this condition, each case must be individualized and surgical intervention decided accordingly.

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From fifteen to twenty servings of most of the common fruits and vegetables are required to yield the same amount of calcium as is contained in one pint of milk.—Hygeia.

Mothers and fathers can do more for their children than most vocational clinics, for it is the atmosphere of the home that is too often at fault.—Hygeia.

Of all the special sense organs the eyes are the most advanced in structure and function.—Hygeia.

INTESTINAL OBSTRUCTION, GENERAL CONSIDERATIONS, AND RESULTS OF LOW INTESTINAL INTUBATION*

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Intestinal obstruction is one of the few surgical diseases in which the mortality rate remains high in spite of progress in the other branches. It is agreed[24,25] that the largest factor in this is the tendency on the part of the patient to delay medical assistance until the general condition is very poor. In many series of cases[25], it has been shown that the lowest mortality rate is seen in patients coming to treatment within the first 12 hours. When seen after twenty-four hours have elapsed since onset of symptoms, the mortality rate remains very high, forty-five per cent to sixty per cent in hospital series and probably higher if all cases were recorded. Because of early localizing signs, external hernias of the intestine with strangulation have a negligible mortality rate while simple obstruction due to adhesions, internal hernias, volvulus, torculus, etc. have a much higher rate.

A series of twenty consecutive recent cases were chosen from the records of Wesley Hospital in Wichita, Kansas, in which the primary diagnosis was intestinal obstruction of some type. These were divided into early and late cases, those showing strangulation and those of a simple character in which there was no early strangulation of tissue.

Mortality is found as follows:

In those operated upon,

1. In the first twelve hours, none died, (four cases, all strangulated.)
2. In the second twelve hours, none died, (two cases.)
3. After forty-eight hours, four died out of six operated upon, (all simple.)

Mortality rate of operated cases is thirty-three and one-third per cent.

Of those on which operation was not performed,

1. Two were strangulated, both died.
2. Four were simple, and two died.

Mortality rate for cases not operated is sixty-six and two-thirds per cent.

Of those not operated upon, two were seen in the first twelve hours, one died, fifty per cent mortality. Six were seen after forty-eight hours,

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three died, fifty per cent mortality.

Of the twenty cases, only one seen in the first twelve hours died, five per cent.

Of those seen after forty-eight hours, sixty-six per cent of the operative cases died and fifty per cent of non operative cases died.

Overall mortality, forty per cent.

This is quite representative of the general run of results. Some, however, are lower. Presbyterian Hospital in New York City is reported as having a sharp drop in the past eight years; 48.6 per cent to 28.4 per cent; and in twenty years from sixty-six per cent to 28.4 per cent[30]. Scudder's mortality rate from hospitals all over the world based on 2150 cases is thirty-five per cent[25].

The etiology of intestinal obstruction, its pathology and treatment, is well known by most people, but for purposes of therapy the following classification developed by Wangensteen is quite simple and useful.

In a consideration of the factors and causes of the high mortality rate in obstruction, the following seem to be important:

1. Dehydration
2. Hypochloremia
3. Toxemia
4. Early destruction of vascular supply of the intestinal wall
5. Distention of the intestine
6. Operative treatment

Dehydration has always been known as a prominent effect, especially of late obstructions. It is caused by low fluid intake and prolonged vomiting. It is frequently present to an alarming degree and necessitates the administration of large quantities of parenteral fluids. The amount to be given is estimated by its effect. Wangensteen says that the most reliable index is the urinary output which should be at least 800 cc. per twenty-four hours. The amount necessary to produce this during the first day may be as high as eight liters. The optimal[15] amount for maintenance is usually agreed to be in the neighborhood of 3500 cc. daily.

Hypochloremia is another prominent effect of prolonged vomiting. The blood chlorides are sometimes seen as low as 250 mg. per 100 cc. of blood.

Pathology	Etiology	Treatment
Simple	A. Mechanical Obstruction	Operative with preceding suction
	I. Narrowing of lumen	
	1. Stricture of wall	
	a. Congenital	
	1. Atresia	
	2. Imperforate anus	
	b. Acquired	
	1. Inflammatory	
	2. Traumatic	
	3. Vascular	
	4. Neoplastic	
	2. Obturation	
	3. Compression from without, (usually pelvis.)	
Simple or Strangulation	II. Adhesive bands	Suction. Operate for persistent obstruction or strangulation
	1. Congenital	
	2. Inflammatory	
	3. Traumatic	
	4. Neoplastic	
Strangulation	III. Hernia	Early operation
	1. External	
	2. Internal	
	IV. Volvulus	
	V. Intussusception	
Simple	B. Nervous	Suction
	I. Inhibition ileus, (paralytic or adynamic.)	
	II. Spastic ileus, (dynamic.)	
Strangulation	C. Vascular	Early operation
	I. Thrombus or Embolus	
	II. Severence or injury of mesenteric vessels, (operative or blunt trauma.)	

Hayden and Orr state that the administration of concentrated sodium chloride gives a remarkable clinical improvement even though the patient is still dehydrated. The amount of chlorides lost by vomiting is readily understood, as according to Mathews[17], the amount of chlorides secreted in the stomach of a dog in two and one-half hours following feeding is equivalent to one half the total chlorides in the blood stream which is about one fourth the total amount in the body. Although the concentration of chlorides in gastric juice of man is about one half of that in dogs, it is readily seen that it is enough to produce a marked drop in the total chloride reserve.

The effect of combined hypochloremia and dehydration is a drastic reduction in urine output in an effort to compensate for the loss of water and chlorides. This explains the high nonprotein nitrogen, frequently over 60 mg. per 100 cc. blood, found in cases of intestinal obstruction. They are usually satisfactorily relieved by adequate amounts of saline parenterally. Another prominent feature is the alkalosis from loss of chlorides, the carbon dioxide combining power often going over eighty volume per cent, and likewise benefited by parenteral saline solution.

The origin of the "toxemia" of intestinal obstruction is not well understood. Whipple and various English authors state that the mucosa of the intestine when deprived of its blood supply breaks down into proteoses and other histamine-like compounds that are quite toxic. They have produced a marked lowering of blood pressure in the intact animal by injection of material from the lumen and around the field of strangulated loop of intestine[3,16].

Recently Scudder and his associates[25,26,27] have made a study of the variations of the level of potassium in the blood, intestinal lumen and peritoneum of patients with intestinal obstruction. They have found an elevation of about fifty per cent of the normal potassium, (20 mg. per 100 cc. blood), in experimental obstruction, high intestinal fistula, and in clinical cases of intestinal obstruction. The action of the pathological elevation of the potassium ion level is somewhat similar to the condition in clinical obstruction, cholera and loss of the adrenal cortex. The source of potassium is supposedly the cellular elements of the blood. Its release is effected by abnormally low chloride levels in the plasma. They find experimentally similar electrocardiogram effects in potassium poisoning and intestinal obstruction.

The theory of absorption of products of bacterial decomposition of intestinal contents has been almost universally abandoned at present.

Early destruction of the vascular supply of a section of the wall of the intestine is in itself very hazardous to the life of the patient, but ordinarily strangulation is so well attended by the localizing signs and symptoms that the patients get early surgery, and the mortality of this group of patients is much lower than any other. Destruction of a large branch of the blood supply as in a massive mesenteric thrombosis or embolus still carries a mortality rate of about ninety per cent.

Distention has long been considered a very prominent phase of intestinal obstruction and a very dangerous one. Early attempts at decompression were all operative and as a result the mortality rate was about sixty per cent to eighty per cent on these. No satisfactory method was found until the advent of continuous gastric suction and continuous duodenal suction. These in many cases serve fairly satisfactorily in decompression of the upper small intestine and at times the lower small intestine with complete relief of obstruction, but there still remains a large group of patients who even after vomiting and pain have been stopped show rather marked distention of the lower abdomen.

Distention of the intestine, particularly in the upper portion, has a tendency to block the venous supply, and then the arterial supply as their respective pressures are equaled by the pressure inside the lumen.[15] Under these conditions, particularly with venous return blocked, gas is secreted directly from the blood to the lumen. Liquid secretion is increased and absorption is much slowed so that a vicious circle is formed. Of course early in the obstruction the main portion of the intestinal contents consists of swallowed air, food and liquids, plus the gastric, biliary and intestinal secretions. When absorption is hindered, another source of gas is found in the combining of acid from the stomach with alkaline intestinal juices, amounting daily to six liters in the intact human.

Gas, according to McIvor[18], Kantor and Marks[15], in the intestinal lumen will undergo exchange with the gases in the blood through the intact mucosa in accordance with the ordinary laws of diffusion.

They find that in order of their disappearance from the intact lumen they are carbon, dioxide, hydrogen sulphide, oxygen, hydrogen, methane, and nitrogen, the latter having a very low constant on account of low solubility and high partial pressure in the body fluids. They also find that this absorption of gas is a reversible process, and by cutting off the venous return to the point of engorement the gas flows into the intact intestinal lumen and fills it. Venous return being cut off by distention alone may account for the rapid distention at times even

though the oral intake is little or nothing. Ordinarily nitrogen is the predominating gas found in the distented intestine. If the intestine is inflated with one of the soluble gases for a time and then examined, it will be found that it is replaced largely by nitrogen on account of its four-fifths of an atmosphere partial pressure in the blood stream and low solubility. Ordinarily large quantities of intestinal gases are eliminated through the blood stream and lungs by this mechanism. Even in obstruction considerable quantities of fluids and gases must be absorbed before the loss of function by rise of intra-intestinal pressure and stretching of the walls.

The problem of deflating the intestinal tract without enterostomy is important because of the extreme danger of opening the intestine in the presence of distention. The feasibility of gastric and duodenal suction is well known, but in many cases this is incomplete and somewhat slow at best.

Intestinal intubation was first successfully attempted in the unobstructed patient by Scheltema in 1908. This was done by passage of a No. 11 F plain rubber tube. It required several days and frequently failed altogether.

Einhorn in 1919 used a No. 8 F tube passing it to the ileocolic junction for use in medication in colitis. This required six to eight days for passage. The tube was in three foot segments strung over a silk thread. The segments had a tendency to come off and be passed by rectum[9].

The first practical method was developed by Miller and Abbott in 1934[19]. This tube had two separate lumens, one of which was connected to a rubber balloon at the distal end of the tube. It was No. 18 F in size and the lumens were of equal size. One lumen opened proximal to the balloon for the collection of intestinal secretions.

Lately Abbott and Johnston[1] have brought out another tube, No. 16 F with one small and one large lumen. This is equipped with a balloon just proximal to the end, inflated by the small lumen. The large lumen ends in a small metal bucket. The total length of the tube is about eleven feet.

They reported that this tube was used in sixteen cases of obstruction. In three cases they failed to pass the pylorus and the patients died. Nine cases were decompressed and resumed normal intestinal function. Four were operated upon successfully following decompression.

The tube moves about two feet an hour in the normal person or one foot an hour in the case of intestinal obstruction. When past the pylorus, the balloon was inflated, and the suction applied to the large lumen, thus deflating that area of intestine and regaining motility. Progress continued until the bucket lay just proximal to the obstruction.

The advantages of the tube are:

1. May be used on late obstructions, some type of suction is always used.
2. Frequently the obstruction subsides, and the patient is not operated upon.
3. If the obstruction does not relax, the tube may be left down an indefinite time, and the patient absorbs fluids by mouth from the proximal gut as in enterostomy.
4. If the pylorus is not passed for any reason, the gastric suction is at least as effective as that routinely used, so that the patient is not deprived of ordinary treatment.
5. The tube may be left in place during operation, thus insuring against post-operative distention and perforation of damaged or weak walls.

Early operation is the treatment of choice, and frequently it has to be done at some time during the course of treatment. In general the earlier the operation the better the patient's chances are as long as the obstruction is mechanical or vascular in origin. If seen early, the obstruction is corrected as simply as possible. In case of severe damage to tissue, it is excised if non-viable.

However, a great number of cases of obstruction are seen late in their course or immediately following an operation. When seen at this stage, they should be put in the best possible condition before operation is attempted. This usually consists of, (1) Parenteral fluids and sodium chloride; (2) Decompression of distended intestine; (3) Morphine; and (4) Heat to abdomen. Unless these are done fairly effectively, the hazard of surgery is prohibitive.

When the patient is in the best possible condition, operation is attempted. In general when operating at this time, the less surgery attempted the lower the mortality rate. Wangensteen has made it a practice when doing this type of operation on simple obstruction to do an enterostomy at the lowest possible point and then send the patient back to bed. He says that frequently simple obstructions relent after enterostomy and require no further surgery. If further surgery is necessary, the patient is in much better condition following an interval of convalescence. Of course if gangrenous areas are found, a resection or exteriorization should be done, One distinct advantage of enterostomy is that the proximal intestine can be utilized as a nutritive tube.

It has been a practice in the past to open the intestine and gently strip it throughout its length, thus completely evacuating it. Needless to say, at present this is not recognized as good surgery. In

intact dogs, shock may easily be produced by this same gentle manipulation.

Most patients dying after surgery for intestinal obstruction are victims of: (1) Late recognition; (2) Operation before condition is good enough to stand surgery; and (3) The attempt of too much surgery in the presence of a distented gut. No doubt this condition could be improved if an easy, effective and non-surgical method of low intestinal decompression was found, so that the patient could wait safely until the condition was improved.

An accurate estimate of the condition of the patient and his chances of survival of surgery is difficult at best. Scudder, in a statistical survey of 2100 operated cases of intestinal obstruction, found that the following index will give an approximate evaluation of the mortality rate[25].

T, Temperature factor. Assign a value of one and add one for each degree above or below 98.6 degrees.

P, Pulse factor. Assign a value of one and add one for each ten per minute over sixty-eight.

R, Respiration factor. Assign a value of one and add one for each rise of five respirations per minute over twenty.

Now multiply T x P x R. Example: If temperature is 100.6 degrees, T factor $1 + 2 = 3$. If pulse is 118, P factor $1 + 5 = 6$. If respiration is 25, R factor $1 + 1 = 2$. $3 \times 6 \times 2 = 36$, and the mortality rate of patients operated in this condition is about thirty-six per cent.

Recently the Miller-Abbott tube has been used on three patients in Wichita. A brief account of the results is shown below.

CASE NO. I

The patient was a white female, single, seventeen years of age. She was admitted to the hospital on June 3, 1938.

Family history was negative.

Past history. The patient had a laparotomy fourteen months before admission; the appendix, one tube and one ovary were removed. At the age of ten years, the patient had had rheumatic fever. When she was admitted to the hospital, she complained of nausea, vomiting, generalized abdominal pain and distention. The onset had occurred five days before admission with sudden cramping gas-like pains in mid-abdomen. She was seen by a physician at that time and given a hypodermic and diagnosis of intestinal colic. That afternoon she rode 250 miles home in a car, vomiting once during the afternoon. Since that time, she has continued to vomit everything taken by mouth including medication given by the physician on the second and third days, (to settle her stomach). She also had several hypodermics for pain. She had no bowel movements after the onset of pain but passed a little gas. Her LMP was three weeks before admission.

Physical Examination. On admission, T 100 degrees, P 120, R 22. The patient apparently was quite ill and complaining of pain, continued nausea and vomiting. The skin, lips and tongue were dry. The chest had no rales or dullness. The heart rate was 120 and regular. The second pulmonic sound was accentuated, and soft presystalic and systalic murmurs were heard over the mitral area transmitted into the left axilla. There was no apparent enlargement. The abdomen showed signs of distention throughout with slight rigidity and slight generalized tenderness. There was tympanetic percussion note, and no peristaltic sounds heard. There was a right rectus surgical scar.

The urine examination showed sp. gr. 1.020, alkaline reaction, 1 + albumen, no sugar. The blood contained 9,000 white cells and had a hemoglobin of eighty-nine per cent; and on the eighth day it was seventy-eight per cent.

Clinical Course. Following gastric suction and parenteral fluids for two days, the temperature climbed to 102.4 degrees and the pulse went to 135. At that time the Miller-Abbott tube was passed, without the balloon, going through the duodenum with some difficulty. The next day, twelve hours later, the tube was found to be four feet down the jejunum, and the patient started having foul smelling liquid stools and gas. The distention rapidly deflated from this time on and the patient's condition markedly improved. However, when the tube was clamped off six days later, the patient stopped passing stools and had abdominal pain. On the tenth hospital day the patient was taken to surgery. A mechanical obstruction, partial, was discovered and freed. A small ovarian cyst was also removed. The Miller-Abbott tube was found to be just above the point of obstruction in the ileum and was left there during the operation and following. During the operation the patient's pulse rose to 160 at one time. Her condition was good on leaving the operating room.

The post-operative course was entirely uneventful and was notable for the lack of distention or vomiting. Bowel movements commenced on the third post-operative day, and the patient was always able to take fluids by mouth. Stools were passed two to three times a day and were liquid in nature; the patient having a moderate diarrhea of about six stools a day from the fourth post-operative day to the eighth post-operative day. The Miller-Abbott tube was removed on the third post-operative day at

which time the patient's temperature, pulse and respiration were normal, and there was no distention. The patient's recovery was entirely uneventful from this time on, and she was dismissed on the sixteenth post-operative day.

After the tube was inserted, the patient was able to drink at will without causing nausea or distress. Much gas was noticed coming through the tube during the progress down the small intestine. Frequent irrigation kept the tube open. If the tube became plugged, immediate distress was noted. After decompression had released the obstruction, the small bowel seemed hypermotile, and absorption was limited so that a considerable amount of liquid was removed through the tube, about one-half to two-thirds of the intake by mouth. This became less apparently because of the increased absorption from the intestine. Moderate difficulty was encountered getting the tube past the duodenum without the balloon attached, and progress down the ileum was rather slow, taking about one and one-half days to reach the area just above the obstruction.

CASE NO. II

The patient was a white female, single, fourteen years of age. She was admitted to the hospital on June 5, 1938.

Family History. Both her father and mother are alive and well. One brother died a year and a half ago following an appendectomy. The appendix was not acutely inflamed, and the patient lived for two weeks following the operation.

Past History. The patient had had the usual childhood diseases and had had no previous attacks of abdominal pain.

H. P. I. Three days ago, the patient began having cramping epigastric pain, associated with nausea and occasional vomiting. Yesterday the patient was quite comfortable. Last night pain was noticed again, this time a little lower and mostly on the right side. The patient ordinarily has a daily bowel movement but has been constipated for the last three days.

Physical Examination. The examination disclosed a well developed, well nourished, white, female child, not acutely ill. The examination was negative except for moderate localized tenderness in the lower right quadrant. There was no distention and no rigidity. Temperature was 99 degrees, pulse 76, and respiration 20. On admission the diagnosis of acute appendicitis was made, and the patient was subjected to a laparotomy. An acutely inflamed appendix was removed. The caecum was found to be very motile and located a little to the left of the mid-line.

On admission the patient's white blood count was 13,000, eighty-two per cent being polymorphonuclear cells and eighteen per cent lymphocytes. The hemoglobin was ninety-three per cent.

Clinical Course. Following the operation, the patient ran a fever of between 100 to 102 degrees with pulse rate of 100. She complained continually of abdominal pain and began to vomit on the sixth post-operative day. At this time a Levine tube was inserted, but no fluids seemed to pass the stomach. The patient felt a little better but continued to have right sided pain. Her condition remained about the same until the ninth post-operative day, during which time the patient passed only small amounts of stools and flatus. The next day the pain became much more pronounced, and the Levine drainage was a thick yellow fluid smelling likes feces. A blood transfusion was given on the eleventh post-operative day, and fluid intake regulated by intravenous and subcutaneous fluids. Her temperature rose to 103 degrees and pulse to 124. On the twelfth post-operative day, the Miller-Abbott tube was inserted with the balloon attached and inflated. The patient was lying on her left side. The tube was promptly passed through the pylorus and in about twelve to fourteen hours had reached six feet past the pylorus. The patient's temperature dropped to ninety-nine degrees, and she passed much gas and many stools by rectum in sixteen hours. The patient was put on a liquid diet and was quite comfortable until the seventeenth post-operative day at which time she had a recurrance of pain, and her temperature jumped to 104 degrees. The Miller-Abbott tube was found to be obstructed by the very slack balloon. After correction, the patient was again comfortable with normal temperature until one week later when the same process was repeated. The patient had another attack of pain and distention one month after operation; and following relief by the tube, recovered rapidly. The tube was removed on the thirty-fourth post-operative day, five days before dismissal, having been in a total of twenty-two days.

Treatment consisted of intravenous saline and glucose, three blood transfusions and intestinal decompression.

X-ray pictures before decompression showed much gas in the small intestine. A barium enema given following decompression showed the colon to be entirely on the left side of the abdomen. The tube, except in one picture, was always entirely on the right side of the abdomen.

The tube could not be passed without the balloon attached as was discovered after wasting twelve hours in the attempt. The main difficulty with the tube in this case was that the balloon became

stretched and hung down around the bucket so that it effectually blocked suction although fluid could always be passed down the tube.

CASE NO. III

The patient was a white female, married, in early middle life. She was admitted to the hospital on July 3, 1938. The diagnosis was full term pregnancy.

Physical Examination. The examination was negative except for a scar in the lower right quadrant. (Date of appendectomy unknown.)

Following normal delivery, the patient passed an uneventful three days. On the third, following a routine enema, the patient complained of very severe cramping abdominal pain which was generalized. The abdomen became quite distended; and four ampoules of pitressin, repeated enemas, colon tube and Levine tube gave no relief from distention. The Miller-Abbott tube was inserted late in the evening of the fourth day. It passed the pylorus with ease and was inserted to two or three feet down the ileum. About 4 a. m. the next day, twelve hours after insertion, the patient began passing much flatus and the distention left rapidly. The tube was removed in two days, and the patient has had no further symptoms.

The tube passed without the balloon with no difficulty.

In these cases it was found that the main difficulties were: (1) Getting the tube past the pylorus; (2) Feeding the tube at the same rate that it was passed by the intestine; (3) Keeping the suction free and open; (4) Keeping the rubber balloon from stretching over the metal bucket; and (5) Introduction of the tube and balloon through the nose.

Passage of the tube is usually somewhat difficult, especially in the distended patient with weak peristalsis or reverse peristalsis. In one case it was passed without the balloon by placing the patient on the right side after entering the stomach. The next case did not put it through in this manner, and so the balloon was attached and inflated in the stomach with the patient on the left side, after which it passed promptly. If the tube is not passed, persistent efforts should be made as it is difficult anyway if the operator is not accustomed to its use. Frequent checking by fluoroscopy is advantageous when the location of the end of the tube is in doubt. One frequent reason for the refusal of the tube to pass is the coiling of the tube in the stomach, and much time may be wasted. As yet no other positive method of knowing when the tube has entered the duodenum has been found.

If the tube is passed too slowly no particular harm is done except that the results are somewhat delayed. Delay in the progress of the tube is usually due to neglect on the part of the attendant to constantly but slowly feed it through the nose at the rate of about one foot an hour. At best it requires close personal supervision.

The tube is rather small and the holes in the bucket are small so that frequent irrigations of the tube with small amounts of saline is the best assurance of keeping it open. This was done usually every one-fourth or one-half hours using ten cc. of saline.

After the tube has been down for several days with the balloon inflated, the constant tugging of peristalsis and pressure within the balloon tend to stretch the balloon so that it falls over the bucket thus making a valve, so that fluid can go down the tube but not up. In order to avoid this, the balloon should be deflated as soon as possible after passage and should be of the best quality of rubber.

Introduction of the tube through the nose was somewhat of a problem at first as some peoples' noses have narrow orifices. When this is the case, it is better to remove the balloon and bucket, and lubricate the tube thoroughly after which any but the very narrowest noses can be negotiated. The tube is then pulled out of the pharynx through the mouth and re-assembled.

Removal of the tube was in no case difficult with gentle traction, although it usually took ten to fifteen minutes.

Indications and contraindications. The tube is indicated in any marked distention of the intestinal tract, paralytic or mechanical obstruction, when it is felt that there is no strangulation of the intestine. It may also be used in early obstructions, as the relief of distention, edema and kinking of the gut frequently cause simple obstructions due to adhesions, to relax. This is particularly true when there are other conditions that would make operation hazardous, post-operative post-partum or debilitated patients.

The question has been raised as to whether the efforts to intubate the patient would not waste valuable time allowing necrosis of strangulated tissue or further distention in case it was impossible to get past the pylorus. Strangulation gives localizing signs and symptoms so that these cases are usually operated before generalized intestinal distention is a factor. In case the attempt to get through the pylorus is unsuccessful, the patient has had constant gastric suction which is accepted routine treatment at present.

SUMMARY

1. Various phases of intestinal obstruction are discussed.

2. The Miller-Abbott tube is discussed.

3. Three cases in which the tube has been used are presented in which it seems that the tube was probably the most important factor in the successful outcome.

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CASE REPORT OF ACUTE UREMIA

Ralph S. Casford, M. D.

Kansas City, Missouri

Eudora S., aged twelve years, ten days prior to her present illness had a mild case of scarlet fever. Four or five days previous to the onset of convulsions her parents noticed that she was more or less drowsy, with occasional headaches and was unable to do her usual work. This continued until the afternoon of the tenth day when she refused to eat her dinner, felt drowsy so was put to bed and shortly thereafter had a convulsion which lasted about three minutes with complete loss of consciousness.

At the time the patient was seen she was semi-conscious and extremely irritable. Reflexes were all hyper-active. Her pupils were widely dilated, vision blurred, and breathing stertorous, B. P. 175/120, pulse rapid, full and bounding. A catheterized specimen revealed ten cc of a highly colored urine, sp. gravity 1030, albumin 3 plus, sugar-negative, and microscopic examination showed a field with many red blood cells. The patient was given morphine grains 1/6 and atropine-sulphate grains 1/150 stat, ethyl chloride inhalation, 150 cc of blood was removed by venous puncture from the right median basilic vein. Warm moist packs were applied to the entire body and a one per cent solution of magnesium sulphate was given intravenously. Later gastric lavage was given and one and one-half ounces of magnesium sulphate given through the tube. The convulsions recurred every fifteen or twenty minutes until 12 p. m. when they became shorter, less severe and farther apart. The last seizure occurred at 5 p. m. the next day and lasted a few seconds. The blood pressure returned to 125/100 in two or three days. The urine continued to show an abnormal number of red cells for a number of weeks. The patient was cared for in the home and no blood chemistry was done. However the P. S. P. was normal on several occasions later.

This case is reported to illustrate a severe kidney infection following a mild case of scarlet fever.

SCARLET FEVER IMMUNIZATION

Caldwell B. Summers, M.D.

Kansas City, Missouri

There has been for several years a controversy as to the efficacy of scarlet fever immunization. At the present time it is not used by most clinicians. The reason being that in the past there have been many severe reactions from the injections. Some few years ago the immunizations were given in three injections at weekly intervals but in recent years they are given in five injections. Even with the five injections severe reactions occur. It has been almost impossible to get mothers to return after the second or third injection. Furthermore the scarlet fever which we have been seeing in the past five years has, as a whole, been very mild with no complications and a short course. The first injection of the serum frequently would be more severe than having the disease. Due to the mildness of the disease, and the severe reactions accompaning the injections, and also the uncertainty of the immunizing qualities, most doctors have abandoned its use.

It has been my good fortune for the past six years to have charge of the medical supervision of some 125 to 150 children at an orphans home. In an institution of this nature it is advisable to prevent any type of an epidemic, consequently all children on admission receive protection against smallpox, diphtheria, whooping cough, typhoid fever, and scarlet fever. It has been for the past four years that all children have received scarlet fever immunization. During this time there have been but two cases of scarlet fever which occurred in 1937. Scarlet fever was prevalent in all sections of the city. In the school which these children attended there were many cases of scarlet fever, but we felt pleased that our orphans home was free of cases. After a month of the epidemic, it occurred to me to analyze the cases which we were diagnosing as influenza and sore throat. Upon close scrutiny it was definitely decided that these children were suffering from scarlet fever but were not being diagnosed as such because there was no rash. The rash as you know is the sole means of a positive diagnosis. After the epidemic had subsided we were able to analyze the cases of so-called sore throat. There were twenty-one cases in all. Of this number two cases had mastoids, five cases had glandular enlargement and four cases had otitis media purulenta. Looking back at these children it is my firm conviction that these children had scarlet fever but with no definite means of diagnosis without a rash The unfortunate thing about these sick children was the fact that they were not quarantined and besides they were sent back to school too soon, thus being a means of spread of the disease to other children.

Having read the several articles on the inadvisability of giving the scarlet fever serum, and due to my personal experience during this past epidemic, I am firmly convinced that to immunize children against scarlet fever is not a practical procedure nor is it justifiable, when all that is accomplished is to immunize them against the rash and not the toxic symptoms which occur from the infection. As scarlet fever has been a rather mild disease in the majority of cases in the past few years, and due to the fact that the antitoxin is specific in the majority of severe cases of scarlet fever, we are of the opinion that to obscure our means of diagnosis, which is the rash, by giving the scarlet fever serum, is to do more real harm than it would be if the child had the disease.

Iron Used For Many Anemias—Use of iron in certain secondary anemits is nearly as spectacular as liver extract in pernicious anemia, W. M. Fowler, M.D., and Adelaide P. Barer, Ph.D., Iowa City, state in The Journal of the American Medical Association for Jan. 14.

Insufficient iron for hemoglobin formation will lead to anemia of the hypochromic type, which is characterized by a reduction in the coloring matter of the blood. This is frequently referred to as iron deficiency anemia. The most common form results from chronic hemorrhage. It occurs whenever the prolonged loss of iron, in the form of hemoglobin, is more rapid than its replenishment from the dietary intake, and it is encountered most frequently in cases of peptic ulcer, hemorrhoids and profuse menstruation.

It is in these anemias that adequate iron medication is particularly effective. In order that all patients may obtain a satisfactory response to iron, the amount given routinely must be considerably more than the average requirement.

The first effect of iron therapy is an increase in the number of immature red blood cells. This occurs before the hemoglobin content is raised and is used as a measuring stick of whether adequate treatment—iron—is being given. However, the best criterion of the effectiveness of iron is the hemoglobin response.

The form in which iron is given is of minor importance, and each physiciona has a favorite preparation. The preparation of iron and ammonium citrates is one of the most popular vehicles and is given in capsules, syrup or water. When it is given in solution the teeth must be protected against discoloration. This is done by using a drinking tube.

Innumerable preparations, with and without added vitamins, of liver, iron and other metals are marketed, but none of these seem to be better than the common simple forms.

The man who loves his work always takes a busman's holiday, for there is never time enough to do everything he wants to do about his job while he is on it.—Hygeia.

PRESIDENT'S PAGE

To the Members of The Kansas Medical Society:

The standards of medicine in Kansas are facing the greatest crisis in its history.

Many years ago Kansas physicians and surgeons had difficulty in establishing a Board of Health, which is now obvious to all that it was for the welfare of all our citizens and not for any selfish interest of the medical profession.

The public has been protected through the efforts of medicine, by education and law, in giving good sanitation, pure water, clean and wholesome milk and food, immunization against many communicable diseases and in the protection of the public therefrom, and even further protected by raising the standards of medical education and practice, so that medical men might be even more efficient in recognizing disease and its problems and be able to cope with them with a knowledge and understanding.

Every one admits that no scientific contributions for the protection of the health of humanity has come from any other source than the medical profession and its co-workers.

But now it seems the medical profession has been derelict in keeping these facts before the public. We take too many things for granted until we learn that through pressure and misinformation there are many of our good citizens, who would have our Legislature pass laws to legalize men and women to practice medicine and surgery with little or no training.

It is high time that every medical man in Kansas get on his toes and lend every effort to stop this proposal of retrogression.

Now is the time to act, next month may be too late! May we continue to hold our standards high, and our code of ethics clean which has up to now stood out as a model, for business and professional men.

N. E. Melencamp, M.D.
President

EDITORIAL

OSTEOPATHIC PROPOSAL

One of the most far reaching and amazing proposals ever made in the Kansas Legislature on the subject of public health and medicine and surgery, is to be found in HB 147 introduced by Representative D. B. Fordyce, an osteopath of Labette County and Representative Caldwell Davis, Jr., of Bourbon County and in SB 171 introduced by Senator C. A. Richard of Nemaha County and Senator C. N. Miller of Ottawa County.

HB 147 which is almost identical with SB 171 reads as follows:

"An Act concerning the practice of osteopathy, providing for the educational requirements, examination and licensing of osteopathic physicians and surgeons, amending section 65-1201, General Statutes of 1935, and repealing said original section.

Be it enacted by the Legislature of the State of Kansas:

Section 1. Section 65-1201 of the General Statutes of 1935 is hereby amended to read as follows: Sec. 65-1201. Any person not now a licensed osteopathic physician and surgeon under the laws of this state, before engaging in the practice of osteopathy in this state, shall make application to the board of osteopathic examination and registration, on a form prescribed by the board, for a certificate to practice osteopathy, giving:

1. His name and age, which shall not be less than twenty-one years, and residence:

2. Evidence of having complied with pre-professional educational requirements herein specified;

3. The name of the school or college of osteopathy from which he graduated, which shall have been in good repute as such, at the time of the issuing of his diploma, as determined by the board;

4. The date of his diploma, and evidence that such diploma was granted on personal attendance and completion of the course of study herein prescribed;

5. Evidence that the applicant is of good moral character, and such other information as the board may require;

6. Such application shall be accompanied by a fee of twenty-five dollars.

Sec. 2. An applicant for examination shall present evidence of a diploma of graduation from a high school, academy, state normal school, college or university, or a certificate of examination for admission to the freshman class of a reputable college, approved by the board, and present evidence of having completed at least two years of pre-professional education of a college grade in a college approved by the board before taking up the study of osteopathy, and shall have graduated, after personal attendance, from an osteopathic school or college of good repute wherein the course of study shall consist of at least four years of thirty-six weeks each, in each separate year, and shall have completed one year internship following graduation in a hospital approved by the board.

Sec. 3. The board shall subject all applicants to a practical examination, as to their qualifications for the practice of osteopathy, in writing, in the subjects of:

1. Anatomy
2. Physiology
3. Bacteriology
4. Hygiene
5. Physiological Chemistry and Toxicology
6. Pathology
7. Diagnosis
8. Obstetrics and Gynecology
9. Operative Surgery
10. Physiotherapy
11. Drug Therapy
12. Principles and Practice of Osteopathy

and such other subjects as the board may require. This may be supplemented by other practical examinations such as the board may by rule determine.

Sec. 4. If the examination is passed in a manner satisfactory to the board, then the board shall issue to said applicant a certificate granting him the right to practice osteopathy in all its branches, which includes operative surgery with instruments, physiotherapy and the use of drugs, as taught and practiced in the legally incorporated colleges of osteopathy of good repute, and the right to register under the laws of the United States of America governing narcotics. All grades made on examination shall be permanently recorded and examination papers kept by the board for a period of five years. Any person failing to pass the examination may be reexamined at any regular meeting of the board within one year from the time of such failure, without additional fee, pro-

vided the board is given twenty days notice in writing.

Sec. 5. The board may, in its discretion, dispense with an examination, and issue a certificate to an osteopathic physician and surgeon who presents a legal and valid certificate or license authorizing the practice of osteopathy, issued after examination, by the legally constituted board of any state, territory, District of Columbia, province or foreign country, or an osteopathic physician and surgeon who presents a certificate issued by the national board of examiners for osteopathic physicians and surgeons, granted only to applicants of substantially the same grade and educational qualifications as those required in this state, at the time such certificate or license was issued, who makes application on a form prescribed by the board, and accompanied by a fee of not less than that of the state, territory, District of Columbia, province or foreign country, from which applicant seeks reciprocity, which shall not be less than fifty dollars.

Sec. 6. The secretary of the board may grant a temporary permit to practice osteopathy, valid only until the next regular meeting of the board, or until the board can conveniently meet, to such applicants only whose credentials are approved by the credentials committee of the board.

Sec. 7. The board shall refuse to grant a certificate to any person convicted of a felony, or guilty of gross unprofessional conduct, or who is addicted to any vice to such a degree as to render him unfit to practice osteopathy, and may, after due notice and hearing, suspend or revoke such certificate for like cause.

Sec. 8. All persons holding a legal and valid certificate to practice osteopathy in this state at the time of the passage of this act, shall be considered as licensed under the provisions of this act, and accorded all the rights and privileges herein provided for osteopathic physicians and surgeons.

Sec. 9. Section 65-1201 of the General Statutes of 1935 is hereby repealed.

Sec. 10. This act shall take effect and be in force from and after its publication in the official state paper."

Section 3 and 8 contain the most amazing features of the bill. Anyone familiar with the history and the fundamental theory of osteopathy knows that the practice of osteopathy was initiated as a "science" depending upon manipulation wherein the use of drugs and surgery was made unnecessary and that at least until recently no osteopathic school claimed to teach these subjects in accordance with the medical viewpoint and that no osteopath claimed to practice them. It is, therefore, remarkable to observe the osteopaths today claiming in the Kansas Legislature that all of the practitioners are as well trained in these subjects as our doctors of medicine and that they are capable of engaging in a complete practice of medicine and surgery. Most certainly no osteopath can justify this present position unless he is willing to admit that osteopathy has abandoned its own therapeutic concept.

Another feature of particular interest is the reciprocity provision which is coupled with the fact that the complete privileges demanded would mean that Kansas would become the haven of all osteopaths in the United States who desire to obtain a medical permit without meeting the requirements of the usual laws regulating the practice of medicine and surgery.

Still another matter of great importance to the public and the healing professions of Kansas is the precedent involved wherein one or more professions may practice the therapy of another profession without meeting the usual qualifications. The present proposal means that Kansas would have two boards with two standards of admission regulating the practice of medicine and surgery and it would also mean that the other professions of healing could ask to obtain the same privileges with the same arguments that the osteopaths are now using. A situation of this kind could obviously mean only one thing—that the public receives no protection from healing licensure and that the quality of medicine and surgery in Kansas would seriously deteriorate through the fact that good physicians would obviously be unwilling to enter the state.

The medical profession frequently finds an obligation placed upon its shoulders to take the responsibility for defeating deterious public health proposals. This is apparently another situation which medi-

cine has met since its inception and over which it has usually triumphed. Every physician in the state who takes pride in the accomplishments of his profession in the saving and protection of human life and who respects the safety and welfare of Kansas, must do everything in power to defeat this pernicious proposal.

EPIDEMIC DIARRHEA OF THE NEW-BORN

Occasional reports of epidemics of infectious diarrhea among the new-born in nurseries of excellent repute remind the general practitioner, obstetrician and pediatrician of a condition that may readily be encountered in local hospitals. Although not common, such epidemics undoubtedly occur with greater frequency than a review of the literature, until lately, would lead one to believe; many of such instances being unreported because of either a lack of laboratory data or a fear of the local comment unfavorable to the hospital. Following years of virtual suppression, the recent publications on this subject in outstanding medical journals indicate a more healthy scientific attitude. It is well to keep in mind the possibility of such occurrences along with an intelligent plan for controlling them. The very nature of the epidemics, usually explosive in onset, and attended with a high morbidity and mortality offers little time for temporizing before tremendous havoc has been created.

The symptom complex, although varying with each epidemic consists primarily of a severe intestinal toxemia; with acute onset accompanied by drowsiness, abdominal distention, marked dehydration, rapid loss of weight, shock and diarrhea, with rarely pus and blood in the stool. In some epidemics, evidences of an acute upper respiratory infection have preceded the onset of the diarrhea. Acute otitis media, mastoiditis and pneumonia, that sometimes occur, are usually considered secondary to the debilitated condition of the patient, and not of primary importance.

The effort to determine the causative factor in these epidemics always proves a difficult task, rarely successful. Dysentery bacilli of Flexner and Sonne types, the Morgan bacillus, bacillus mucosus, and a variety of organisms not thought of as highly virulent to man have been reported. Virus studies made by the New York City Department of Health and at the Rockefeller Institute have thus far failed to throw any light on the morbid agent. A filterable virus, an organism, or even a variety of organisms non-pathogenic for an older individual, but pathogenic when introduced into the intestinal tract of the new-born may prove responsible. Post-mortem examinations of the infants who died during the various epidemics have revealed fed pathological changes and no characteristic lesions.

To control an outbreak in an institution, it has been learned that temporizing in the hope that the disorder will abate, is a mistake. Any suspected case should be isolated immediately, the nursery closed to all admissions and emptied as speedily as possible. Thorough cleansing and renovation of the nursery should follow.

In view of the unknown nature, the high mortality and lack of effective treatment, it is of paramount importance that preventive measures be seriously considered. The spread of fatal diarrhea in the new-born raises the question of whether present day practices are beyond reproach.

Critical appraisal of housing, communal equipment, nursery traffic and technique show them in many instances to be faulty to a dangerous degree. Correction of these faults must follow the lines of tightening of technique. It may be necessary to institute individual cubicle isolation or even disperse the nursery, holding the babies in smaller groups. Rigid asepsis must be applied to anything coming in contact with the baby's mouth or nose.

The departments of health of New York City and Chicago, working with representatives of the county medical societies and the Academy of Medicine have adopted standard regulations governing lying-in institutions and nurseries for the new-born. Such measures may in time, prove helpful in preventing these disconcerting outbreaks. Local hospital groups could profitably compare their new-born care to the same standards.—L. C. E.

CANCER CONTROL

PRE-CANCEROUS AND CANCEROUS DERMATOSES

J. V. Van Cleve, M.D.

Wichita, Kansas

The term "pre-cancerous" is attached to a group of skin manifestations which, if followed to the end result of their development, may be malignant tumors of the skin. A great many lesions, such as verruca seborrheica and keratosis senilis, although clinically benign, already show malignant degeneration of their cellular constituents when they are examined under the microscope.

It is doutbful if any one method of treatment can be recommended to the exclusion of all others. The use of surgery, diathermy, x-ray and radium, and the combined use of these methods, have all found their place in the treatment of skin cancers. The well-trained therapist is not a faddist. He should individualize in every case and be prepared to use the ideal physical agent or combination of physical agents for the case in question. By means of different physical methods or their combinations, one may arrive at the same result. This is only a matter of personal experience and technic.

Caustics of various kinds in the form of pastes, applied without preliminary operative interference such as curettage, have seldom been used during the last few years, except by the quack and illegal practitioner, who continues to attract the credulous and unsophisticated public by his alluring advertising and propaganda. Rare, indeed, is the case of cancer

PRE-CANCEROUS LESIONS

Name	Pre-disposing causes	Localization (Common)	Clinical appearance	Biopsy	Pathology	Treatment
Senile Keratosis	Old Age Sunlight Dry non-pigmented skin	Face Hands Forearms	Irregular, brown or gray scaley patches with ill defined borders Firmly adherent scales Usually multiple	Necessary when indurated or shows inflammatory borders or if it bleeds easily	Hyperkeratosis Mild perivascular infiltration In corium	Electro-dessication Cautery Radium X-ray CO_2 snow
Seborrheic Keratosis	Old Age Seborrheic skin	Back Chest Face Hands	Sharply circumscribed, round or oval, brown to brownish black, elevated patches Greasy friable scales	Necessary when indurated or shows inflammatory border	Hyperkeratosis Acanthosis Perivascular infiltration in corium	Electro-dessication Cautery Radium X-ray CO_2 snow
Leukoplakia	Smoking Dental caries Syphilis Poor dental hygiene	Tongue Oral and genital mucosae	Irregular milky white patches, and streaks Slight elevation, and induration	Necessary when thick, warty or fissures are present	Hyperkeratosis Acanthosis Chronic inflammation of papillary & subpapillary layers of corium	Improve dental hygiene Remove carious teeth Omit tobacco and alcohol Electro-dessication Cautery Radium Treat Lues if present
Kraurosis Vulvae	Unknown Chronic inflammatory condition with trauma Trophic Endocrine	Vulvae	Atrophy of labia minora Thin, dry, atrophic skin with leukoplakia Pruritis	Necessary when warty nodule present Fissured leukoplakia	Atrophy of both derma and epidermis Chr. infl. of corium Areas of leukoplakia	Local hygiene X-ray Complete vulvectomy with plastic repair
	Overdose of X-ray or radium	Any location	Dry, atrophy, pigmentation or de-pigmentation Telangiectasia, sclerosis, keratosis, scar and late ulceration	When ulceration or keratosis develop	Atrophy of epidermis Basophilic degeneration of cutis framework Dilatation of capillaries	Fulguration or Surgery
Xeroderma Pigmentoas	Congenital Lack of protective mechanism to sunilght	Face Hands Exposed surfaces	Pigmentation and atrophy, keratosis freckling Resembles chronic radio dermatitis	Necessary if keratosis are present	Can find changes of lentigo, atrophy, verrucous, papillamatous, and carcinomatous	Is incurable Protect against sun Remove keratosis and cancers with fulguration and x-ray or radium
Lupus Vulgaris	True tuberculosis of skin Scar of years' duration	Face Hands Any part of body	Deep seated, yellowish brown nodule Crusting, ulceration, scarring, and atrophy are common	Necessary if ulceration present Pearly nodule or warty excrescences	Tubercles in upper corium Acanthosis Hyperkeratosis	Rest and good hygiene Gerson diet Fulguration Finsen light
Moles (Naevi)	Embryonic rests Irritation	Any part of body	Pigmented or non-pigmented soft tumors on the skin of varying sizes	Necessary if lesion is growing, or if inflammatory halo present	Naevoid cells Varies with types	Fulguration Surgery
Cornu Cutaneum	Irritation	Face Hands Scalp	Peculiar horny outgrowths of skin	Always necessary	Tremendous hyperkeratosis Chronic inflammation of corium	Fulguration Surgery

of the skin, not too far advanced, which cannot be cured today, by the expert with the use of x-ray, radium or surgical diathermy.

Early diagnosis and treatment in all pre-cancerous and cancerous conditions of the skin cannot be over-emphasized. The treatment should be prompt and thorough, with the aim to achieve complete eradication at one sitting. The object of any treatment is to destroy every malignant cell, and if this can be accomplished, regardless of the method, a permanent cure is the result.

It is now almost universally recognized that in order to produce a good therapeutic effect with roentgen or radium rays on a skin carcinoma, it is necessary to apply a dose which will have a cytocautic action. In other words, it is necessary that a dose of sufficient strength be applied to produce a primary destructive effect on the carcinoma cell, without, however, injuring the normal tissue around the lesion. Undoubtedly, the most common error committed is the use of small, inadequate exposures to roentgen or radium rays, leading to the establishment of a radio-immunity. Thus, the failure of the first irradiation renders further therapy exceedingly difficult and hazardous, and markedly reduces the chance of cure. The importance of effecting a complete sterilization of the tumor process at the first irradiation is not sufficiently appreciated.

CONCLUSION

1. All pre-cancerous lesions should be destroyed and carefully followed.

2. Early diagnosis and treatment of all pre-cancerous and cancerous lesions cannot be over-emphasized.

3. Caustics of various kinds in the form of pastes

CANCEROUS LESIONS

Name	Pre-disposing causes	Localization (Common)	Clinical appearance	Biopsy	Pathology	Treatment
Basal cell epithelioma	Follows precancerous dermatosis Sun and wind Chronic irritation Old age	Face Hands	Nodular or ulcerative lesions, slow growing Induration Telangiectasia at borders	Always	Strands of dark staining basal cells invading the corium Elongated rete pegs Moderate inflammatory reaction in papillary bodies and underlying cutis	Fulguration followed by x-ray or radium Surgical excision followed by x-ray or radium
Squamous cell epithelioma	Follows precancerous dermatosis Sun and wind Chronic irritation Old age	Face Hands Mucous membranes	Nodular, rapidly growing, indurated lesion Later ulcerates and has rolled border Mostly on mucous membranes	Always	Epithelial proliferation Mitotic figures numerous Strands and wharls of squamous cells in cutis "Pearls" Normal architecture completely gone	Fulguration followed by x-ray or radium Surgical excision followed by x-ray or radium
Baso-squamous cell epithelioma	Follows precancerous dermatosis Sun and wind Chronic irritation Old age	Face Hands Mucous membranes	Cannot be distinguished from basal or squamous cell except by biopsy	Always	A combination of basal and squamous infiltrating cells with pearl foundation	Same as squamous cell
Melano-carcinoma	Irritation of pre-existing melanoma	Any place on body	Black raised mole with evidence of growth	Always	Alveolar infiltration cells usually of nevoid type Hyperplasia of connective tissue and infiltration of lymphocytes and plasma cells	Wide surgical excision X-ray Radium
Bowen's Disease	Unknown	Any part of body Torso	Round, oval or serpiginous, slightly raised, scaley, indurated placque, well marginated	Always	Hyperplasia Dyskeratosis Mitotic figures Numerous Bowen's cells "corps ronds"	Fulguration followed by x-ray and radium
Pagets disease of nipple	Unknown	Nipples	Chronic weeping eczema around nipples with induration	Always	Hyperplasia Dyskeratosis Paget cells Inflamed infilteration of lymphocytes and Plasma cells Proliferation of lining epithelium of ducts	Total mammectomy followed by irradiation Remove axillary nodes
Sarcoma	Unknown	Rare Any location	Small cutaneous or subcutaneous nodule that is growing slowly	Always	Varies with the type as mentioned in classification	Wide surgical excision X-ray and radium on lymphosarcoma Other types not radio-sensitive

are used only by the quack and illegal practitioner.

4. There is no one method which can be used to the exclusion of all others.

PRE-CANCEROUS	CANCEROUS
1. Senile Keratoses	1. Basal cell epithelioma
2. Seborrheic Keratoses	2. Squamous cell epithelioma
3. Leukoplakia	3. Baso-squamous cell epithelioma
4. Kraurosis Vulvae	4. Melanocarcinoma
5. Radio-dermatitis	5. Paget's disease of nipple
6. Xeroderma-pigmentosa	6. Bowen's disease
7. Lupus Vulgaris	7. Sarcoma
8. Moles	(a) Fibrosarcoma
9. Cornu Cutaneum	(b) Spindle cell sarcoma
	(c) Giant cell sarcoma
	(d) Neurogenic sarcoma
	(e) Dermato fibrosarcoma
	(f) Melano sarcoma
	(g) Lympho sarcoma

EYE, EAR, NOSE & THROAT

CORNEAL INJURY WITH COMPLICATIONS

H. C. Markham, M.D.

Parsons, Kansas

J. E. B., age twenty six years, an employee of a large corporation came to the company hospital during the third week of May, 1938, with a supposed injury to his left eye. The company surgeon had treated him for several days with his condition becoming steadily worse. He complained of photophobia, lachrymation, anorexia, loss of weight, very intense pain and practically no sleep for a week. He stated that he thought he could stand anything until this condition developed. Since then he had changed his mind as it had about exhausted all of his endurance. He had been handling chat for quite a while and believed some particles had gotten into his eye and this circumstance was the responsible factor for all of his trials and tribulations.

After the administration of ¼ gr. morphine hypodermically and a liberal instillation of local anesthesia I was able to proceed with the examination of his condition which revealed the following: Cilia normal, no entropion or ectropion. The palpebral conjunctiva extending back into the retrotarsal fold was thoroughly infected with trachoma. Ocular conjunctiva was intensely inflamed. The cornea was completely interlaced with very fine blood vessels, translucent and appeared as though it had been freely sandpapered. A large oblong ulcer, with ragged edges was located just below the pupillary area. The ulcer extended in the 4:30 o'clock—9 o'clock direction. The edges were undermined and quite irregular and dipping down into the substantia propria in some portions. An attempt had been made to dilate the pupil which was not visible in its entirety, nevertheless the photophobia was intense. Pannus was pronounced in the upper portion of the cornea. This is the picture of the problem that baffled my early efforts. This case appeared to be of a type similar to those with which I had dealt over a period of years, however, it proved to be a much more resistant type.

TREATMENT

All attempts at dilatation resulted in failure. A liberal use of morphine was required to obtain rest. The ulcer was cauterized and apparent improvement with lessened pain prevailed for a period of thirty six hours when trouble broke loose again. There was an increase in pain and a pronounced extension of the area involved. Cauterization was repeated for a second and third time with unsatisfactory results. It was very evident that there was only one goal in front of us—perforation sooner or later with all of its attendant difficulties and disaster that goes with the loss of an eye and the patient's opinion of the physician's ability. Local treatment of the lid availed nothing. Pain, narcotic requirements and inability to eat had wrought havoc with his physical and mental state.

His plight was discussed with him in detail, he being unusually intelligent for a person engaged in the type of work he had been performing. He stated that "Anything offering a degree of success and relief would be satisfactory; go ahead and do whatever your best judgment dictates." Consequently the morning of June 5 he was operated under ether anesthesia. The trachoma follicles on the lid and retrotarsal folds were expressed and followed by a very thorough grattage that left nothing to the imagination. The eye was flushed with warm boric solution and a saemich section was done in the long axis of the ulcer. The section extending from the temporal sclero-corneal junction to approximately one MM of the nasal sclero-corneal junction.

A few drops of one-half per cent solution of ethylhydrocuprein hydrochlorid was instilled and some one per cent atropine sulphate ointment was sandwiched between the lids. A light bandage was applied and patient returned to bed. Without an anodyne he slept all night, ate a very good breakfast and felt in good spirits. A greatly swollen lid was in evidence and an inspection of the cornea was out of the question, medication previously mentioned was instilled and a light dressing applied. The second morning swelling had subsided enough to discover that there was an adhesion between the corneal wound and the lid. A blunt probe was passed be-

tween the eyeball and the lid breaking loose the attachment and reopening the anterior chamber.

The adhesion was a kindness on the part of nature, the aforementioned medication was instilled and eye kept closed. The fourth morning a good view of the cornea was obtained. Pannus and corneal vessels were rapidly disappearing. The edges of the ulcerated area were becoming smoothed out and the excavated area was filling in at a rapid rate. The pupil was fully dilated, a condition which could not be obtained before operation. Inspection of the lid and retrotarsal fold showed a very satisfactory state of progress. Ethylhydrocuprein hydrochlorid was continued, atropine being discontinued.

Patient was discharged on the eighth day. The following results had been achieved: Trachoma was completely eradicated, ulcer healed rapidly and patient was entirely free from pain after operation. He has a very useful eye with vision of sixty per cent +.

MEDICAL ECONOMICS

A DOCTOR'S RESPONSIBILITY UNDER THE KANSAS UNEMPLOYMENT COMPENSATION LAW

D. H. Roney*

Topeka, Kansas

The Kansas Unemployment Compensation law is based on one of the eleven Titles of the Federal Social Security Act, passed by Congress in 1935, and provides for a system of "job insurance".

The Kansas insurance law is less than two years old, and while it does not insure Kansas physicians unless they are permanent members of a hospital staff which has eight or more employees who otherwise meets the liability requirements under the law, its broad application and public interest should lead all physicians to make themselves familiar with the theory and provisions of the law and the results of benefit payments. In many communities the payment of unemployment benefits will be reflected in the economic welfare of homes and families whence come the people with whom the physician must deal.

While the Kansas Unemployment Compensation Law has nothing to do with hours of labor or wages, it does provide that the unemployed person be compensated for his lack of employment without it having to come in the form of relief. It is a job insurance on which the premiums are paid by the employer and is based on the worker's former wages earned in covered employment.

Job insurance has no connection with health insurance, in fact it is based on the work record which implies good health of each worker. In order to be eligible for job insurance the worker must at that time be able and available for work. Also the worker must have previously earned wages in covered employment in order that he will have sufficient wage credits to obtain benefit payments.

The program set up under the law for the payment of unemployed benefits combats the idea that "the world owes every man a living". The benefits paid are not relief or charity but come to him as a matter of right, based on his previous work record. The fact that benefit payments belong to the worker by right —that they are collected from his job insurance policy—will help to preserve his morale and help him to maintain his self-respect. This with the help of the Kansas State Employment Service, which is one of the sections of the Unemployment Compensation Division, will distinguish the willing worker, who desires to give a fair day's work for a fair day's pay, from the person who is always seeking unearned and undeserved support from the public. The objective of the law is to stabilize employment and through such stabilization to provide sustained buying power.

Unemployment benefits which are paid weekly are based on the worker's previous earnings, and are limited to approximately half the worker's weekly wages and to approximately 16 weeks duration. It is expected that these payments will enable the worker to avoid application for relief or appeal to charity during periods of temporary unemployment, and that the continued buying power which will find its way into all business channels, even though limited in amount, will act as a cushion or shock absorber for business during periods of depression.

The unemployment problem is comparatively a modern question. The word "unemployment" did not appear in our dictionaries until about 1880, and the question did not attract serious attention in the United States until about 1910. Technological unemployment, meaning unemplyoment resulting from the displacement of men by the use of improved and new machines and processes, has been on the increase from the beginning of the twentieth century, and the theory of unemployment reserves has been discussed for years, but no plan for setting up such reserves had been given serious consideration by

*Supervisor, Research and Information Division, Kansas Unemployment Compensation Commission, Topeka, Kansas.

Congress until the Social Security Act was passed August 14, 1935. The unemployment problem approached the acute stage soon after the World War, and relief measures were introduced in Congress in the early twenties. The return of prosperity during the following years appeared to make such legislation unnecessary at that time, but the economic and industrial crash of 1929, and its continuation in varying degrees of intensity up to the present time, has made the public more or less "unemployment conscious" and resulted in enactment of the Federal Sociay Security Act and unemployment insurance laws by all the states.

Unemployment demanded the attention of England and other governments of Europe much earlier than its effects were felt in the United States and those countries began experimenting to find a solution of the problem as early as the 1890's. The first efforts there to provide an unemployment insurance fund were directed to voluntary contributions by employers, supplemented by government grants. This plan did not prove satisfactory and in 1911 England adopted the plan of compulsory contributions by employers and employees, based on payrolls as the main source of income. France, Germany, Sweden, Denmark and other governments of Europe, about twenty-one in number, now have unemployment insurance programs in successful operation. The principal difference between the systems of Europe and the programs of Kansas and the other forty-seven states and Alaska, Hawaii and the District of Columbia, all of which now have unemployment compensation laws, is that benefit payments in Europe are generally based on the "need" of the worker, the amount paid varying in many instances with the financial condition and number of dependents in the worker's household, while in the United States program the employee's work record is the only factor which enters into the calculation of benefit payments due. Also in Europe the workers are usually required to contribute a percentage of their earnings to the compensation fund while in the United States only seven states require contribution by the worker, the remaining forty-four units requiring all contributions to the fund to be made by the employers.

Formerly, in the United States the open physical frontiers, being the natural resources in farm lands, timber, minerals, and water power, provided fields in which a majority of their citizens could work and their social security problems. However, in the modern industrial world, with most of the natural frontiers practically closed or occupied, with its population now 66 2/3 per cent urban instead of 66 2/3 per cent rural as it was in the last decade of the nineteenth century, and with millions of people entirely dependent on the pay envelope, it became imperative that steps should be taken to meet the present situation of labor and to build up confidence for the future.

Present conditions in the industrial world appear to have aroused interest and created public sentiment to such an extent as to indicate that unemployment insurance is here to stay. Job insurance is designed as a cushion to assist workers who have formerly been left to shift for themselves until they find reemployment.

The Kansas Unemployment Compensation Law is based on the philosophy of making provision in times of plenty for the rainy day—for short periods of unemployment which workers all experience eventually both in times of prosperity and depression.

It is not intended that the government or the state shall relieve the worker of his personal responsibility in providing for himself and his dependents or to lead him to think that thrift and foresight are to be discarded as out of date. The enactment of unemployment compensation laws by the states does not mean that the unemployment problem is solved. None of these laws nor all of them together provide a cure-all and no one claims that the Kansas law ever approaches the goal of perfection, but a foundation has been laid upon which it is hoped there can be built a system which will reduce to a minimum the hazards of unemployment. The problem demands the thoughtful consideration of the best minds in each community.

TUBERCULOSIS CONTROL

The following extracts from an article by Dr. Arnold Rice Rich, which was presented before the Hennepin County Medical Society in Minneapolis, Minnesota, April 4, 1938, appeared in the February 1939 issue of a phamphlet, Tuberculosis Abstracts, issued monthly by the National Tuberculosis Association:

AGE INFLUENCES TUBERCULOSIS

Differences in the tuberculosis mortality rate at the different periods of life have been regarded by many as evidence that there are corresponding differences in native resistance at the various age periods. Simple mortality rates are, however, influenced by important factors other than age. We are interested, therefore, in knowing the number of deaths in relation to the infected portion of a given age group. Statistics regarding the incidence of in-

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fection by age groups are incomplete and woefully lacking for adult groups and for infants in the first year of life. Another difficulty is that hypersensitivity to tuberculin may fall to a low level a year or two after infection and consequently tuberculin test surveys do not always give a true picture of the amount of infection.

Despite these difficulties it is possible to make a conservative estimate of the incidence of infection for each group. The author has collected statistics from numerous sources and constructed a table showing the ratio of tuberculosis deaths to the number of infected persons by age groups. From this table we may draw the following conclusions:

1. That tuberculosis is most fatal during the first year of life;

2. That it is much less dangerous, but still markedly so during the succeeding several years;

3. That the period between five years and puberty is a strikingly "safe" period, during which the mortality from the disease decreases in spite of the fact that the incidence of infection increases.

4. That following the age of puberty there occurs a sharp increase in the death-hazard among those infected.

5. That the increase in the tuberculosis mortality-hazard continues steadily into adult life, reaching a peak in the middle twenties, after which it continues at an elevated level throughout the remainder of the life span, but with variations that depend upon sex, occupation and economic conditions.

6. That in old age there occurs a second peak of mortality-hazard.

The most dangerous age period in which to be infected is that of the first five years of life, and most particularly during the first year; the safest period is that between five years and puberty. From puberty onward the chance of dying if infected increases rapidly until it reaches a peak, the precise age period of which is inconstant in the total population and may be different for each sex at different periods of time. The mortality rate among the infected is always high in old age, but it may be lower than the first adult peak. How are these age peculiarities to be explained, and what relation, if any, do they bear to age-determined differences in native resistance?

INFANCY

Since infants cannot move about to court infection, they are ordinarily exposed either to heavy and continued infection or to none at all. Malnutrition, more frequent in infancy than later, affects resistance to tuberculosis. The native ability of the infant to resist infections in general is deficient. In tuberculosis, the rapidity with which an effective degree of acquired resistance develops following infection plays a very important role in determining the outcome of a primary infection.

BETWEEN ONE AND FIVE YEARS OF AGE

During the second year of life the external influences which favor a high death rate among those who become infected are still operative but to a lesser degree. After the second year of life the death rate of those who become infected falls markedly. This may be due to the fact that the ability to move freely outside the home is accompanied by the opportunity for acquiring single, slight infections which can be well resisted. Children between two and five years of age have a decidedly greater ability to form immune bodies than have infants.

BETWEEN FIVE YEARS AND PUBERTY

The tuberculosis mortality rate among those infected is markedly lower than that in any other decade. While free movement at this age leads to a great increase in primary infections, far fewer of these infections produce progressive fatal disease. In this decade, children are most protected against the vicissitudes of life—they are safeguarded in the home and in school and are spared the stresses and debilitating influences of later life. They enjoy outdoor play, and sufficient rest and sleep.

In addition there is evidence that the mechanism for developing acquired resistance ("serological maturity") becomes established. Antibody-producing power reaches its height during the period from five years to puberty.

ADOLESCENCE

The sharp rise in the tuberculosis mortality curve at the period when puberty adjustments take place, suggests that pubescence may be accompanied by a depression in resistance. While opportunities for acquiring infection are greater at this age, this factor does not account for the mortality rise; mortality increase for outstrips infection increase. Nor can the mortality increase be accounted for by the assumption that active tuberculosis at this period represents the evolution of infection acquired earlier.

The mortality rise in adolescent females is more pronounced and occurs at an earlier age than in adolescent males. The puberty alterations likewise are more profound and occur earlier in females than in males. Progressive lesions in adolescence often show characteristics indicative of a lower degree of resistance.

ADULT LIFE

Tuberculosis mortality continues to rise into adult life and ordinarily reaches its peak in the middle twenties. The effects of occupational hazards, childbearing, care of the family and the struggle for existence are now in full play. The terms "over-stress

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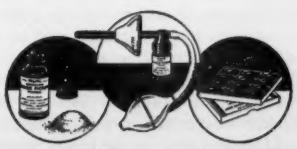

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and strain" and "the run-down state" while vague and unscientific, nevertheless express very real hazards in the body's struggle to hold a tuberculosis infection in check.

There are many who maintain that the previously uninfected adult is more susceptible to tuberculosis than is the child and that it is an advantage, therefore, to become infected in childhood. The author does not hold that view. After analyzing the advantage and disadvantage conferred by a primary infection, he strongly urges that all individuals should avoid spontaneous and uncontrolled infection as far as is reasonably practicable.

OLD AGE

In the final period of life, after sixty, the tuberculosis death rate rises sharply. Increased opportunities for exposure to infection can certainly not be the cause here, for the aged tend to draw away from contact with the world. One, therefore, suspects the presence of factors that depress resistance.

In the aged, tuberculosis often progresses with strikingly few symptoms, save for the cough which is often not severe. It is, therefore, frequently unsuspected even when tubercle bacilli abound in the sputum. Such cases may be the source of fatal infection for children and it is of great importance to investigate the reason for a persistent cough in an older person. The belief that tuberculosis in the aged is more benign than at other age periods is not well founded. All available evidence indicates that the aged have a lower degree of resistance than the middle-aged, though the responsible factors are not precisely known.

The author concludes: "The peculiarities of susceptibility and resistance at the various age periods, and the manner in which external factors act to alter resistance, constitute, perhaps, the most important problems in tuberculosis today, not only from a theoretical but, indeed, from a highly practical standpoint; and they deserve the most serious and intensive investigation. In this review of the general outlines of the problem, I have sought chiefly to stress the narrow limits of our present information, rather than to attempt to provide a series of comfortable, theoretical explanations for these complex and incompletely understood phenomena."

So closely related are the stomach and the heart that they are frequently confused when trouble in one or the other arrives.—Hygeia.

There is nothing to dread about cancer of the breast if one finds it in time, because it can be cured if treated early!—Hygeia.

NEWS NOTES

COMMITTEE MEETINGS

The following are the minutes of the meetings of the Committee on School of Medicine and the Committee on the Control of Tuberculosis:

A meeting of the Committee on School of Medicine was held in Emporia, on December 18. Members present were: Dr. F. J. McEwen, Wichita, chairman; Dr. L. B. Spake, Kansas City; Dr. J. A. Blount, Larned; Dr. N. P. Sherwood, Lawrence; Dean H. R. Wahl, Kansas City; Dr. L. F. Schuhmacher, Meade; Dr. C. M. Alderson, Dodge City; Dr. Philip W. Morgan, Emporia; Dr. L. R. McGill, Hoisington; Dr. Fred Angle, Kansas City; Dr. O. O. Stoland, Lawrence; and Clarence Munns as Executive Secretary.

The minutes of the last meeting were read and approved.

Dean H. R. Wahl presented an extensive report concerning admissions to the University of Kansas hospitals. Upon motion by Dr. Angle, seconded and carried, it was agreed that the report by Dean Wahl should be presented in the annual report of this committee.

The committee requested that Dean Wahl prepare an article for the Journal describing the present program for new facilities at the medical school.

The committee agreed to assist the medical school in the handling of its legislative recommendations in any way possible. Upon motion by Dr. Schuhmacher, seconded and carried, it was agreed that the committee should endorse the need for a new medical-pharmacal building at Lawrence.

The possibility of obtaining additional funds for research from various foundations, federal agencies, and other sources was discussed and tabled until the next meeting.

Dean Wahl reported concerning the present policy for admission of students to the University of Kansas School of Medicine.

Dean Wahl also reported that the staff of the medical school would attempt to provide regular scientific articles for the Journal.

The problem of obtaining needed teaching material at the University was also discussed.

Adjournment followed.

A meeting of the Committee on Tuberculosis was held in Topeka, on December 11, 1938. Members present were Dr. Henry W. Tihen, Wichita, Chairman; Dr. N. C. Nash of Wichita; Dr. C. H. Lerrigo of Topeka; Dr. C. F. Taylor of Norton. Dr. Clifton F. Hall of Topeka; Dr. E. A. Trump of Ottawa; Dr. F. L. Loveland of Topeka; and Dr. J. L. Lattimore of Topeka were present as guests of the Committee, and Clarence G. Munns was present as Executive Secretary.

Minutes of the last meeting were read and approved.

First item of business was a discussion of post-graduate courses on Tuberculosis. Dr. Lerrigo reported that he had discussed this matter with Dr. L. R. Pyle, Chairman of the Scientific Program Committee of the 80th Annual-Session, and that a speaker on Tuberculosis will be provided on that program. The Committee asked Dr. Lerrigo to cooperate with Dr. Pyle in selecting a speaker for this purpose. Dr. Lerrigo also reported that he had not as yet completed arrangements to present a post-graduate course at Bell Memorial Hospital and that he would report further on this possibility at the next meeting. Dr. Nash was asked to continue his activity in connection with establishing a list of speakers for presentation of Tuberculosis programs at county medical society meetings.

RECENT ADVANCES IN THE SCIENCE OF NUTRITION

VI. The Chemical Identification of Thiamin or Vitamin B_1

● An outstanding accomplishment of American Biochemical research has been the chemical identification—by degradation and by synthesis—of thiamin or pure vitamin B_1 (1). Thus, another dietary essential long known by its physiologic functions has been identified chemically, in this instance as a quaternary thiazole.

This discovery is of the most basic importance in the field of vitamin B_1 research. Determination of the chemical nature of this factor permits not only explanation of certain previously known facts concerning vitamin B_1, but in addition, has opened new fields of research. One of these is already concerned with the development of a reliable chemical method for estimation of thiamin which will be generally applicable to foods.

At present, quantitative determination of vitamin B_1 necessarily requires the use of one of the several bioassay methods available for that purpose. None of these is entirely satisfactory (1, 2). Perfection of a chemical method for quantitative measurement of thiamin in foods would add greatly to our knowledge of its occurrence in nature, as well as permit more comprehensive studies of factors which might influence the stability of vitamin B_1 in foods. We have a relative paucity of such data relating to vitamin B_1 when the available information on vitamin C is considered.

It should also be stated that the synthesis of thiamin—which is now produced on a commercial basis—has already provided the clinician with a most useful diagnostic tool. Administration of the pure vitamin in cases of suspected thiamin deficiency, with notation of the therapeutic response, constitutes the most trustworthy means of detecting avitaminosis B_1. After the diagnosis has been confirmed and the immediate deficiency corrected by administration of thiamin, it is desirable that future adequate supply of vitamin B_1 be obtained through dietary readjustments (1).

In this connection, commercially canned foods deserve particular mention. Nutritional research (3, 4) on various members of this class of foods has demonstrated their potential value when included in a varied diet calculated to supply optimal amounts of vitamin B_1.

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(1) 1938. J. Amer. Med. Assn. 110, 727.
(2) 1938. Ibid. 111, 927.
(3)a. 1936. J. Nutrition 11, 383.
b. 1936. J. Amer. Diet. Assn. 12, 231.
(4)a. 1932. J. Nutrition 5, 307.
b. 1932. Ind. Eng. Chem. 24, 457.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the forty-fifth in a series, which summarize, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.

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Dr. Nash reported concerning the survey of x-ray facilities in the state which the committee made under his direction.

The real reason for this survey originated thru a desire to assist in improving Kansas tuberculosis diagnostic facilities.

Dr. Nash was asked to arrange a meeting of radiologists in the state for discussion of possibilities in expanding and improving Kansas x-ray facilities.

Upon motion made by Dr. Lerrigo, seconded and carried, it was suggested that Dr. Taylor should confer with the Board of Administration and the Medical Advisory Committee of the Norton Sanatorium in regard to present requirements for admission to that institution.

Dr. Taylor reported concerning x-ray consultations now being given by the staff at the Norton Sanatorium, and asked instructions about future work in this regard. The Committee asked that this matter be discussed with Dr. Nash.

Dr. Hall reported concerning the Kansas State Board of Health's problem on Tuberculosis reporting. He was asked to prepare Journal articles and a series of bulletins on this subject.

Dr. Nash was asked to discuss with Kansas radiologists the possibility of establishing a standardized price for provision of indigent x-ray. The Committee suggested that a price of $2.50 or $3.00 might be fair and reasonable for this purpose, and the committee will recommend one of these two figures as a minimum price after Dr. Nash has had an opportunity to consult with the Kansas radiologists in regard to this matter.

Upon motion of Dr. Taylor, seconded and carried, the Committee recommended a minimum price of $4.00 per refill for the pneumothorax therapy of indigent patients.

Upon motion by Dr. Taylor seconded and carried it was moved that the committee wholeheartedly approve and assist in any way possible the Christmas seal sale of the Kansas Tuberculosis and Health Association.

Decision was made that the next meeting of the Committee shall be held in Norton at the Norton Sanatorium on a Sunday morning during the latter part of February, 1939.

Adjournment followed.

The first meeting of the new Society Committee on Control of Heart Disease was held in Emporia on January 29. The committee is composed of the following members: Dr. Philip W. Morgan, Emporia, Chairman; Dr. T. T. Holt, Wichita; Dr. James G. Stewart, Topeka; Dr. Maurice Snyder, Salina; Dr. Fred E. Angle, Kansas City; Dr. H. H. Jones, Winfield; and Dr. Fred J. McEwen, Wichita. The following are the minutes forwarded to the central office by Dr. Morgan:

Six states throughout the United States of America were reported to have such committees. Various plans have been used by county and city medical groups over the country. The committee is at present collecting information which it is hoped will be useful to the Kansas profession in handling its cardiovascular problems. It is hoped to ultimately be able to present dependable statistics as to the types of heart disease and relative incidence in Kansas. From these facts the Society could, it is hoped, offer its membership detailed advances in the conditions which are most prevalent. One of the first obstacles encountered is the lack of uniformity in nomenclature. This may be due to many causes. As an example of that protean nomenclature the following diagnoses in the Vital Statistics department has been supplied by Dr. F. P. Helm of the Kansas State Board of Health: pericarditis, acute endocarditis, unspecified endocarditis under forty-five years, chronic endocarditis, chronic endocarditis over forty-five years, acute myocarditis, myocarditis under forty-five years, chronic myocarditis, disease of myocardium unspecified, angina pectoris, diseases of coronary arteries, functional diseases of heart, other and unspecified disease of heart.

In subsequent issues of the Journal the committee will present summaries of its work and apparent recommendations. The American Heart Association is cooperating in the survey and if arrangements can be made the members of the Society will be supplied widely used and recommended criteria for classification and diagnosis of heart disease and the monthly publication of the American Heart Association called "Modern Concepts of Cardio-Vascular Disease."

The Council of the Society met in Topeka on Wednesday February 8 at the Hotel Jayhawk. Major items of discussion were the measures pending in the Legislature at the present time.

JOINT MEETING

Members of the Society Committee on Medical Economics held a joint meeting with members of the Kansas State Hospital Association at the Hotel Jayhawk on Sunday, January 28 in Topeka.

Foremost topic of the meeting was the discussion of a group hospitalization plan for Kansas.

The Kansas State Hospital Association will submit to the present Legislature a bill which will enable the Association to render a non-profit hospital service. The bill will follow in substance the proposed model law enabling the formation of a non-profit hospital service association as recommended by the committee on hospital service and council on hospital care of the American Hospital Association. A summary of the proposed bill follows:

"In substance, the proposed model law, as recommended by the American Hospital Association, provides for the organization of a non-profit corporation created for the purpose of establishing, maintaining and operating a non-profit hospital service plan whereby hospital care may be provided by said corporation to such of the public as become subscribers to said plan under a contract which entitles each subscriber to certain hospital care. The corporation shall operate under the insurance code and shall be subject to the supervision of the State Commissioner of Insurance.

Contracts for the rendering of hospital service to subscribers shall first have the approval of the State Commissioner of Insurance and all contracts shall constitute direct obligations of the hospitals for hospital care; rates to be charged shall at all times be subject to the approval of the Commissioner of Insurance. The services of medical doctors shall not be included in said contracts.

The books and records of said corporation shall at all times be available to the Commissioner of Insurance. Said corporation shall be declared a charitable and benevolent institution, its funds and property being exempt from taxation."

GRADUATE COURSE

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completed its sixth postgraduate course in the western part of the state, with 89 physicians out of the 178 registered, in attendance.

The course was held from November 28 to December 23, 1938, and consisted of lectures on obstetrics and pediatrics which were presented to the physicians in thirty-nine counties. In ten of these counties all practicing physicians were enrolled.

The county medical societies in the respective counties of Norton, Colby, Garden City, Liberal, and Dodge City, acted as hosts for the course.

BLIND PROGRAM

Dr. C. J. Mullen, State Ophthalmologist, Kansas City, Kansas, issued the following reports for December, 1938 and January, 1939, respectively, pertaining to the Kansas State Board of Social Welfare restoration of sight program:

December, 1938

No. of cases approved as eligible for treatment to date....434
No. of cases completed treatment 83
20 cases still eligible for Aid to the Blind
63 cases no longer eligible for Aid to the Blind
No. of cases under treatment 118
No. of cases eligible for treatment (not heard from.....233
Statistics Concerning Completed Cases in December
Total cost of completed cases in December $1,411.85
Average cost of cases completed in December.. 64.18
Doctors Fees 58.58%
Hospital Fees 30.77%
Optical Fees 9.91%
Drugs ..... .74%
Disposition of Eye Reports
No. of eye reports into the office (as new cases).....1615
No. of cases non-eligible for Aid to the Blind..... 327
No. of cases eligible for Aid to the Blind 1274
No. of cases pending 14

January, 1939

No. of eye examinations 1671
No. of cases eligible for Aid to the Blind 1325
No. of cases non-eligible for Aid to the Blind by eye examination 341
No. of cases pending 5
No. of cases app. eligible for treatment to date..... 462
No. of cases under treatment as new cases..... 96
6 other cases are under treatment who have completed one type of treatment
No. of cases completed treatment to date..... 114
28 cases still eligible for Aid to the Blind
86 cases non-eligible for Aid to the Blind after treatment.
Total costs of 23 cases completed during January 1939 .....$2063.88
58.9% Doctors Fees 1220.00
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NEW MOTHER'S MANUAL

The revised fourth edition of the Mother's Manual compiled by the Society Committee on Maternal and Child Welfare and the Child Hygiene Division of the Kansas State Board of Health, has recently been forwarded to every physician in Kansas. Copies for patients may be secured by writing the Division of Child Hygiene, Kansas State Board of Health, 935 Kansas Avenue, Topeka, Kansas.

The Board of Health states that there has been a marked increase in requests for this booklet since the mailing of the revised edition and also that copies will be mailed directly to the patient if the physician so desires.

ART TELLS HISTORY OF AMERICAN MEDICINE

"Beaumont and St. Martin"

"Beaumont and St. Martin" is the first of six large paintings in oil memorializing "Pioneers of American Medicine" which artist Dean Cornwell will complete in the next few years. Others in the series are: Dr. Oliver Wendell Holmes, Dr. Ephraim McDowell, Dr. Crawford W. Long, Dr. William T. G. Morton, and Major Walter Reed, and one woman, Dorothea Lynde Dix who, while not a physician, stimulated physicians to study insanity and feeblemindedness.

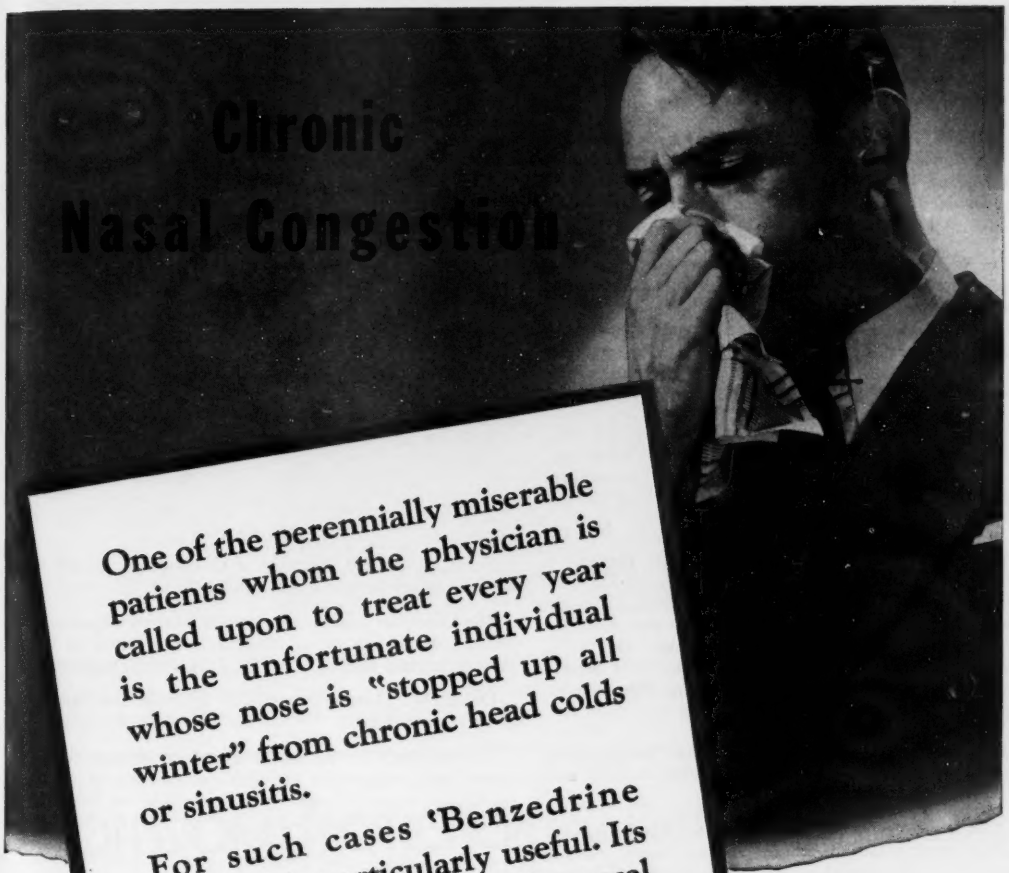
Arrangements to supply physicians with free, full color reproductions of "Beaumont and St. Martin" without advertising, and suitable for framing, have been made with the owners, John Wyeth and Brother, 1118 Washington Street, Philadelphia. Please address requests to The Kansas Medical Society, 406 Columbian Building, Topeka, Kansas.

COUNTY SOCIETIES

The Atchison County Medical Society held election of officers for 1939 at a meeting on January 10 in Atchison. The following were elected to serve: Dr. F. I. Stuart, Atchison, president; Dr. R. C. Jeffries, Atchison, vice president; and Dr. F. K. Bosse, Atchison, secretary-treasurer.

Dr. C. H. Warfield, Wichita, was the guest speaker on the scientific program at a meeting of the Butler-Greenwood County Medical Society on January 13 in Eureka. His subject was "Chest X-Ray" illustrated with lantern slides.

The regular meeting of the Clay County Medical Society was held in Clay Center on January 18. Dr. L. S. Nelson, Salina, as guest speaker presented a talk on "Modern Treatment of Fractures of the Neck of the Femur".



One of the perennially miserable patients whom the physician is called upon to treat every year is the unfortunate individual whose nose is "stopped up all winter" from chronic head colds or sinusitis.

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Members of the Comanche County Medical Society re-elected Dr. R. A. J. Shelley, Coldwater, as president, and Dr. Paul A. Lindquist, Coldwater, as secretary, at a recent meeting of that society held in Coldwater.

Dr. E. W. Hellweg, Arkansas City, was elected president of the Cowley County Medical Society at a meeting in Winfield on January 26. Others elected to serve for 1939 are: Dr. N. B. Fall, Winfield, vice president; Dr. W. G. Weston, Arkansas City, secretary.

Dr. W. A. Smiley, Junction City, was re-elected president of the Geary County Medical Society at a meeting of that society held in Junction City on January 25. Other officers re-elected to serve during the coming year are as follows: Dr. R. J. Lanning, Junction City, vice president; Dr. L. S. Steadman, Junction City, secretary-treasurer; Dr. Robert M. Carr, Junction City, State Meeting Delegate.

The following officers were elected to serve during 1939 at a recent meeting of the Johnson County Medical Society; Dr. D. E. Bronson, Olathe, president; Dr. Kenneth W. Carbaugh, Overland Park, vice president; Dr. R. R. Becker, Spring Hill, secretary-treasurer.

The Labette County Medical Society held election of officers for 1939 at a meeting in Parsons, January 18. Those elected to serve are: Dr. L. A. Proctor, Parsons, president; Dr. M. C. Ruble, Parsons, vice president; Dr. O. E. Stevenson, Parsons, secretary-treasurer; Dr. A. C. Baird, Parsons, State Meeting Delegate. Dr. O. E. Stevenson, gave a talk on "Demonstration of the Electrocardiograph".

Members of the Lyon County Medical Society entertained the Doctor's Wives Club at a dinner-meeting held in Emporia on January 10.

Approximately twenty members of the Marion County Medical Society and the Marion County Dental Association held a joint meeting in Marion on January 4. Following a dinner a non-medical motion picture was presented.

Dr. J. B. Anderson, Centralia, was elected as president of the Nemaha County Medical Society at a meeting held in Sabetha, on January 17. Dr. F. E. Wrightman, Sabetha, will serve as secretary-treasurer, and Dr. S. Murdock, Jr., Sabetha, State Meeting Delegate.

The Pawnee County Medical Society held a meeting in Larned on January 2 with Dr. C. E. Sheppard, Larned, as the principal speaker on the scientific program.

Members of the Pratt County Medical Society were hosts to members of the Pawnee County Medical Society at a dinner-meeting in Pratt on January 27. Dr. Vern L. Pauley, Wichita, spoke on "Renal Anomalies", and Dr. N. C. Nash, Wichita, talked on "Carcinoma of the Uterus".

The Reno County Medical Society held their annual election of officers at a recent meeting in Hutchinson. Those elected to serve are: Dr. J. J. Brownlee, Hutchinson, president; Dr. I. E. Hempstid, Hutchinson, vice president; Dr. H. R. Barnes, Hutchinson, secretary-treasurer.

Election of officers was held at a meeting of the Rice County Medical Society on January 26 in Sterling. The following were elected to serve for 1939: Dr. L. J. Beyer, Lyons, president; Dr. E. R. Hill, Lyons, vice president; Dr. A. A. Sprong, Sterling, secretary-treasurer. Dr. J. V. Van Cleve, Wichita, presented an illustrated talk on "Fungus Diseases".

Dr. A. Jeffers, Smith Center, was elected president of the Smith County Medical Society for 1939 at a recent meeting held in Smith Center. Dr. V. E. Watts, Smith Center, will serve as secretary and Dr. H. Morrison, Smith Center, State Meeting Delegate.

The Sumner County Medical Society held its annual election of officers at the January meeting held in Wellington. Those elected to serve are: Dr. J. E. Hill, Conway Springs, president; Dr. Earl E. Clark, Belle Plaine, vice president; Dr. J. M. McGrew, Wellington, secretary-treasurer; Dr. Farris Evans, Conway Springs, State Meeting Delegate.

A dinner-meeting of the Wilson County Medical Society was held in Neodesha on January 9.

The Wyandotte County Medical Society held a meeting in Kansas City on February 7. Dr. Donald F. Coburn, Kansas City, spoke on "Neurosurgical Treatment of Pain" and Dr. O. M. Longenecker, Kansas City, spoke on "Appendicitis".

MEMBERS

Dr. R. H. Rollow, formerly of Chanute, has moved to St. John where he will continue his practice.

The December issue of the Current Medical Digest carried a condensation of an article entitled "Errors in the Field of Internal Medicine" by Dr. J. M. Porter, Concordia.

Dr. L. W. Hatton, formerly of Halstead has opened an office in Salina.

The members of the Kansas Board of Medical Registration and Examination attended the meeting on Medical Education and Licensure which was held on February 13 and 14 in Chicago, Illinois.

DEATH NOTICES

Dr. John Clifton, 75 years of age, a resident of Vermillion died at the home of his daughter in Topeka on January 15. Dr. Clifton was born in Illinois in 1864 and received his degree of medicine from the St. Joseph Medical College in 1901. He began his practice of medicine in Vermillion, and remained there until the time of his death. He was a member of the Marshall County Medical Society.

Dr. John Thomas Davis, 85 years of age, died at his home in Liberty on December 26. Dr. Davis was born in Warren County, Indiana, in 1853. He received his medical education at the Michigan University School of Medicine at Ann Arbor, and was graduated from there in 1879. He located at Elk City in 1881 and later moved to Liberty where he continued his practice until 1919 when he retired from active practice.

Dr. Marcus Claude Roberts, 60 years of age, died in Hutchinson on January 6. Dr. Roberts was born in 1878 and received his medical education at the Northwestern University Medical School in Chicago, graduating in 1906. He was a member of the Reno County Medical Society.

BOOK REVIEWS

TEXT BOOK OF PATHOLOGY by E. T. Bell, M.D., professor of pathology, University of Minnesota, Minneapolis, Minnesota. Contributors, E. T. Bell, M.D., B. J. Claw-

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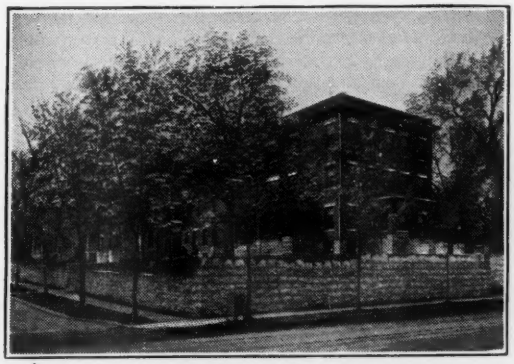

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son, M.D., Hal Downey, M.D., J. S. McCartney, M.D. and C. J. Watson, M.D. Published by Lea and Febiger, Philadelphia, third edition, 1938. 894 pages, 412 engravings and 2 colored plates. Price $9.50.

This is an excellent general pathology, well written and prepared, excellent engravings and ample discussion of pathological problems confronting the student and physician. This edition discusses many subjects, not ordinarily included in a general pathology. For example: Injuries due to chemical and physical agents. The chapter on thrombosis and embolism presents the matter in concrete form. The author has written an excellent chapter on tuberculosis, also one on venereal diseases, especially covering syphilis. For clinical application, the chapter on fungus diseases covers the ordinary fungi encountered. A complete classification of tumors is given with ample discussion of connective tissue, epithelial, muscle, nerve and blood forming organ tumors, with a specially good chapter on carcinoma. A portion of the book is then devoted to diseases of the various organs, calling attention to the various pathological conditions that may be encountered in a given organ. Some of the comparatively newer diseases are discussed, such as psittacocis, Rocky Mountain spotted fever and etc. More space than usual is devoted to the pancreas and to a discussion of the pathology of the ductless glands. For a general pathology, the author gives a good general consideration to neuro-pathology and to hematology, subjects that are usually omitted. This is the best general pathology that the reviewer has had the privledge of reading and is worthy of a place in the library of every physician. J. L. L.

HERNIA—Leigh F. Watson, M.D. Publishers, C. V. Mosby Company, St. Louis, Missouri. Price $7.50. (Second Edition).

This excellent monograph on hernia, the first edition of which was published in 1924, has been revised and brought up to date, chiefly because the introduction and popularization of the injection treatment rendered the old edition obsolete. There have been, in addition to the inclusion of the injection treatment, numerous other changes —elimination of procedures no longer in common use, and addition of new ones of value.

The discussion of the subject of hernia is complete in every detail—anatomy, etiology, classification, complications, anesthesia, operative procedures, and the injection treatment, in which is included a chapter on the fitting of trusses. The whole volume is well arranged, and illustrated with many excellent drawings which add much to the value of the book.

This book is a masterpiece and covers its field completely, concisely, and authoritatively, both in the field of the common hernias (inguinal, femoral, umbilical, and ventral) and the rare types (such as obturator, sciatic, lumbar, perineal, and sliding hernias, and hernias of the appendix, Meckel's diverticulum, bladder, ureter, ovaries, and so on). It is an interesting book to read "straight through", and an excellent one to which one may turn in "looking up" some isolated facts.—O. R. C.

INJECTION TREATMENT OF HERNIA—Carl O. Rice, M.D. Publishers, F. A. Davis Company, Philadelphia. Price $4.50.

Though the injection treatment of hernia has in the past been considered an unethical procedure used only by irregular practitioners, it now seems to have become established as having a definite and useful place in the armamentarium of the surgeon. Such books as this one will do much to popularize and standardize the procedure, and increase the effectiveness with which this type of treatment will be given by the average surgeon.

Dr. Rice has emphasized throughout his book the choice of proper cases for this type of treatment, the anatomical, physiological, and pathological basis of treatment, and the necessity of the treatment being adequate and carried out systematically and thoroughly. Failure in any of the links of the chain means failure of the entire course of treatment, and without complete cooperation of doctor and patient, this method will surely fail.

There is some confusion in a mixture of old and new terminology in the chapter on anatomy, but this is easily forgiven when the excellent material in the book is discovered. Adequate consideration is given to technic and to the after care. At the conclusion of the book there is a summary of the existing state compensation laws as related to hernia. Kansas physicians will be disappointed, however, to find that Kansas is one of the three states omitted from the tabulation.

Anyone intending to treat hernias by the injection method, or expecting to intelligently advise this type of treatment for selected cases, could profit by reading this book.—O. R. C.

AUXILIARY

The Labette County Auxiliary met December 28 at the home of Mrs. G. W. Hay, Parsons. Reports of the State Auxiliary Board meeting at Hays were given by Mrs. R. W. Urie, State Chairman of Organization, and Mrs. T. D. Blasdel, State Hygeia Chairman. Papers on public relations were read by Mrs. Urie and Mrs. H. C. Markham, the latter paper having been prepared by Mrs. N. C. Morrow who was unavoidably absent.

A joint meeting of the Southeast Kansas Medical Society and Auxiliary was held at Vanes Patio, December 21. The attendance represented nearly every town in the district. Both the medical society and auxiliary were represented in the program.

Mrs. J. W. Shaw of the Sedgwick County Auxiliary gave a review of the book, "The American City and It's Church," by Dr. Samuel Kincheloe at a regular meeting of the Womans Home Missionary Society of the First Presbyterian Church, Wichita.

Mrs. H. O. Anderson and Mrs. Floyd C. Beelman of the Sedgwick County Auxiliary are actively interested members of the current affairs club of the Wichita chapter of the American Association of University Women.

Mrs. E. J. Nodurfth, Sedgwick County Auxiliary, President of the Wichita Council P. T. A. and state third vice president attended the January meeting of the state board of P. T. A. in Topeka.

Mrs. J. W. Shaw, Sedgwick County Auxiliary, reviewed the book "The Journey Tapiola," by Robert Mason at the meeting of the Wichita University Dames Club January 19.

One of a series of advertisements prepared and published by PARKE, DAVIS & Co. in behalf of the medical profession. This "See Your Doctor" campaign is running in the *Saturday Evening Post* and other leading magazines.

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Throughout the next six or eight weeks especially, it will be wise to take every possible precaution against pneumonia. Get plenty of rest—for pneumonia's greatest ally is fatigue. Avoid any over-exposure, particularly to extreme cold and dampness.

But above all, if anyone in your family has a cold and his or her temperature rises above normal, don't delay! Call your physician at once. Watch out, too, for chills, pain in the side or chest, and a cough. They, also, are danger signals that should be heeded promptly.

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SEE YOUR DOCTOR

The December 12 meeting of the Sedgwick County Auxiliary was held at the Innes Tea Room. Holiday decorations prevailed. Dr. Hazel Branch, head of the Zoology Department of Wichita University was guest speaker. Her subject was, "Women in Science." A group of Christmas carols was sung by Estere Sevin.

Members of the Sedgwick County Auxiliary Board met at the home of Mrs. G. W. Kirby December 5 at luncheon. After the business meeting a musical program was presented by the Drowatzky Sisters.

The Sedgwick County Auxiliary met January 9 at an elaborate luncheon in the Hypatia Club. Mrs. Glen C. Barlette of Belle Plaine was the guest speaker. Her subject was, "Flower Arrangement, and Flowers Best Adapted to Kansas." The Bartlette arborature is known all over the nation by flower lovers.

The Sedgwick County Medical Society was host to their Auxiliary and members' wives and other guests at the annual yule banquet December 20. The attendance was approximately 200. At this meeting occurred the installation of the medical society officers for the coming year. The entertainment of the evening was a presentation of songs by the Wichita Civic Boys Choir under the direction of Mrs. Dorothy Benze, musical sketches, and varieties by a group under the direction of Coleman Ashe. The speaker of the evening was W. F. Lilleston, Wichita attorney.

Mrs. L. E. Knapp, press-publicity chairman of the Sedgwick County Auxiliary, is performing a painstaking and conscientious task in her department. Each month brings to our desk an envelope packed with clippings from the Wichita news papers. No item containing the name of an Auxiliary member escapes her vigilant eye. The items are sent with the member's names underlined. When one reads of the great activity of Sedgwick members and the publicity received, one is not puzzled by the success of Sedgwick county in getting things done. All these items will appear in the state scrap book, although many are denied printing in the Journal because of their social character. The state book will go to the annual national convention.

Only a few county auxiliaries are sending reports regularly. Some of those with populous centers are remiss. Will not you who have been hiding your light or your press-publicity chairman under a bushel let your light shine forth to encourage this department and bring the benefits of publicity to yourselves and others?

The state board of the Kansas Auxiliary held a well attended and most successful and enjoyable meeting in Hays, December 1 with the Central Kansas Auxiliary as hostess organization. The meeting was honored by the presence of our National President, Mrs. Charles Tomlinson of Omaha, whose address described the usefulness of the Auxiliary and its obligations to the public and profession. The meeting and luncheon at the Lamar Hotel were attended by thirty-six ladies.

The Central Kansas Auxiliary elected the following officers at their December meeting. Mrs. Alza McDermott, Ellis, president; Mrs. P. S. Brady, Hays, vice president; Mrs. A. J. Horesji, Ellsworth, secretary; Mrs. L. W. Reynolds, Hays, treasurer.

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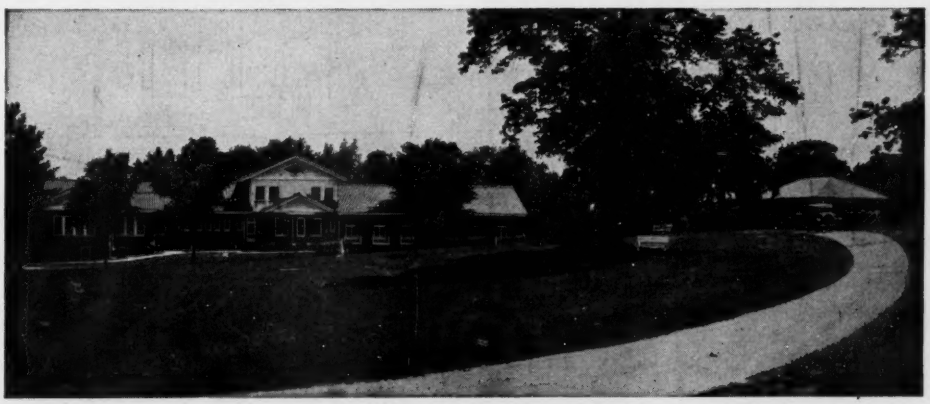

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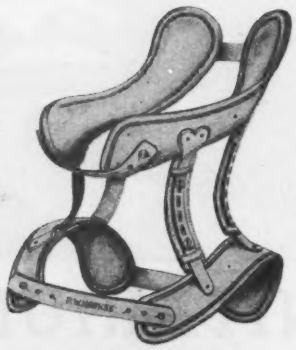

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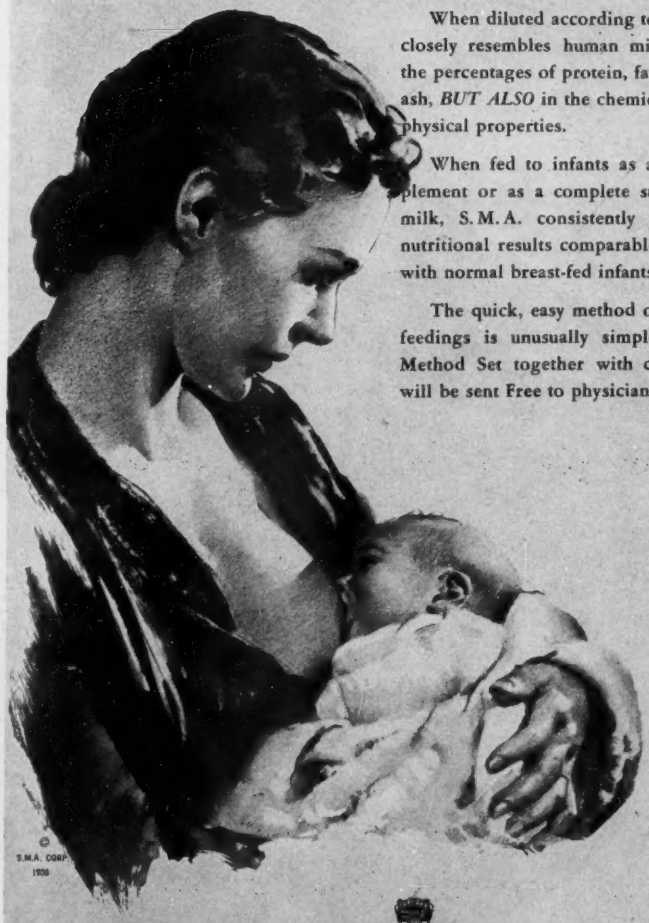

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OLEUM PERCOMORPHUM (Capsules)

Especially convenient when prescribing vitamins A and D for older children and adults. As pregnancy and lactation increase the need for vitamin D but may be accompanied by aversion to large amounts of fats, Mead's Capsules of Oleum Percomorphum offer maximum vitamin content without overtaxing the digestive system. 25 and 100 10-drop soluble gelatin capsules in cardboard box. Not less than 13,300 vitamin A units, 1,850 vitamin D units (U.S.P.) per capsule. Capsules have a vitamin content greater than minimum requirements for prophylactic use, in order to allow a margin of safety for exceptional cases.

Uses: For the prevention and treatment of rickets, tetany, and selected cases of osteomalacia; to prevent poor dentition due to vitamin D deficiency; for pregnant and lactating women; to aid in the control of calcium-phosphorus metabolism; to promote growth in infants and children; to aid in building general resistance lowered by vitamin A deficiency; for invalids, convalescents, and persons on restricted diets; for the prevention and treatment of vitamin A deficiency states including xerophthalmia; and wherever cod liver oil is indicated.

**U.S.P. Minimum Standard*

MEAD JOHNSON & COMPANY
Evansville, Indiana, U.S.A.

ETHICALLY MARKETED

We purposefully selected for these products classic names which are unfamiliar to the laity, or at least not easy to popularize. No effort is made by us to "merchandise" them by means of public displays, or over the counter. They are advertised only to the medical profession and are supplied without dosage directions on labels or package inserts. Samples are furnished only upon request of physicians.

***If You Approve This Policy Specify* MEAD'S**

OLEUM PERCOMORPHUM

Ethically Marketed — Not Advertised to the Public

Please enclose professional card when requesting samples of Mead Johnson products to co-operate in preventing their reaching unauthorized persons

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